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ABSTRACT

This document, which was written by a teacher with more than 40 years of teaching experience, is intended to help new and experienced teachers engage in the following activities: reflect upon their philosophy of teaching; plan, conduct, and evaluate their teaching and learning process; and improve the way they function as teachers in their school and community. The following are among the topics discussed: (1) the functions of a teacher (teaching, administrative and management, occupational/subject area specialist, and student counselor functions); (2) techniques for planning lessons (good teaching, basic learning principles, lesson plan components); (3) techniques for teaching lessons (initiating and maintaining interest, stimulating student thinking, using instructional materials, communicating effectively, practicing effective classroom management, providing application and practice, testing); (4) guidelines for assessing student learning; (5) strategies for managing teacher-student relationships; (6) ways of preventing misbehavior; (7) guidelines for functioning as a faculty member in the school and community; and (8) the elements that go into being a teacher. Ten figures are included. The bibliography lists nine references. The following items are appended: additional summaries of pedagogical skills and concepts; guidelines for selecting and using audiovisuals and other instructional materials; and guidelines for linking the planning, teaching, learning, and assessing processes. (MN)

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What Being a Teacher Is All About

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Acknowledgments

Working in the field of education for over 45 years as a teacher and school administrator, I've had a multitude of students, bosses, colleagues, and staff. I'm most grateful to them for the experiences I have had in helping new teachers understand and use the processes of planning, teaching, learning, and assessing learning. These experiences—these contributions—helped to make this book possible.

It is also appropriate for me to give a large measure of credit to my several department chairs at The Ohio State University. They have given me the latitude to perform my job as I thought best, and the opportunity to hone my personal skills in teacher education.

I am grateful to William Waidelich, Director of Curriculum Materials Service, for his willingness to publish this book. Also, special thanks goes to Nicki King, editor of Curriculum Materials Service, for her patient and invaluable assistance in shaping this book.

Finally, many, many thanks to my wife, Donna, for her patience and understanding concerning the time and energy required for such an endeavor.

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Preface

This publication is basically a summary of the pedagogical skills, attitudes, and understandings that I have found to be effective in my forty-plus years as a professional educator. Hundreds of student teachers and beginning classroom teachers have been taught what is in this book. Practicing teachers use these skills as they perform the four functions of a (vocational) teacher: teaching, administration and management, occupational technician/subject area expert, and student counselor.

My experiences as an educator are interwoven with the concepts, philosophies, and other information provided in this book. I have observed over 6,000 lessons taught by student teachers and beginning teachers. I offer a summary of these experiences in this book.

I trust that you the educator will respect the labor that went into making this book, and that you will not make copies of it for any purpose without my written permission.

Enjoy the book! Enjoy the profession of teaching! For **to teach is to touch the heart of each of your students.**

Lowell E. Hedges, Associate Professor Emeritus
Department of Human & Community Resource Development
The Ohio State University

Foreword

Deciding to become a professional teacher requires a serious commitment by an individual. This role is one of the most important in our nation. Vocational teachers are in a unique position to help future workers develop their academic, employability, and occupational skills. It is by using these skills that these workers can best meet the rapidly changing needs of the workplace. How teachers can best meet this need is the focus of this book.

The information that Dr. Lowell E. Hedges has assembled is based on sound theory from the literature related to critical thinking, problem solving, academic and occupational competencies, and teaching and learning. He has combined this knowledge with his insight and many years of experience as a master teacher, school administrator, and teacher educator.

The seven chapters and appendices of this book will help both new and experienced teachers to reflect upon their philosophy of teaching; to plan, conduct, and evaluate their teaching and learning process; and to improve the way they function as teachers in their school and community. A list of references at the end of the book gives the reader access to additional background information on the substance of this book.

Dr. Hedges is to be commended for the very practical advice he has provided. His positive approach to teaching and learning is evident throughout this publication.

N. L. McCaslin, Professor and Chair
Department of Human & Community Resource Development
The Ohio State University

Welcome to the Teaching Profession!

"Teachers affect eternity; they never know where their influence will stop."
— Henry Ward

You are entering one of the most important professions, or **the** most important profession in the world: being a teacher.

First-rate teachers contribute to excellence in the educational system. Excellence in its educational system contributes to excellence in a nation.

There can be no excellence in a nation without a first-rate educational system. There can be no excellence in education without first-rate teachers. There can be no excellence in the teaching profession without first-rate preparation. One can change the curriculum, buy more materials, refurbish the physical environment, lengthen the school day, but **no change will take place without good teachers**.

One objective of the educational system is to foster positive change and growth.

Change in the life of a nation, of a community, of an individual is inevitable. Hopefully, whatever changes occur, they will be for the benefit of all. One of the objectives of the educational system is to foster positive change and growth. The overall objective of education in the United States, I believe, "is to raise the level of prosperity of U.S. citizens and the U.S. society, on one hand, and to support and accelerate economic, social, and cultural development in national unity and integrity on the other hand for the eventual purpose of making the United States a constructive, creative, and distinguished member of the modern world."

The teacher is the most effective tool to help the educational system achieve its objectives. Teachers must be well prepared to carry out their responsibilities.

To achieve this objective, effective educational tools must be used. And the primary educational tool is not a facility, textbook, or computer program. It is the teaching staff. For public and private education to be effective in helping our nation achieve this educational goal, there must be teachers, and those teachers must be effective.

In this guidebook for you, the beginning teacher, we will review and reinforce some of the basic pedagogical concepts, principles, and skills that you may have learned (or will learn) in your pre-service training program.

Use this guidebook to review and reinforce the basic pedagogical concepts, principles, and skills possessed by excellent teachers.

For more in-depth learning concerning the material in this publication, we invite you to study the references listed throughout the chapters and also in the list of References. We urge you to prepare an Individualized Professional Development Plan. A personal plan for your continuing education (or inservice education) is essential if you are to continue to grow in the great profession of teaching.

We wish you success in your chosen career of being a teacher. We hope that you will learn more from this publication: *What Being a Teacher Is All About.*

– Lowell Hedges

Chapter 1
What Are the Functions of a Teacher?

Four Functions of a Teacher

In this chapter, we will examine the job of the teacher in a school and the surrounding community. The job of a teacher can be summarized as including four functions: teaching, administration and management, occupation/subject area specialist, and student counselor. We will briefly examine each function in this chapter. More details will follow in later chapters.

The teacher has four functions to perform:

1. *Teaching*
2. *Administration and management of a program*
3. *Occupational and/or subject area specialist*
4. *Student counselor, friend, and role model*

1. The Teaching Function

a. You are the teacher of students as individuals in a group within the total class membership, and as a class.

b. Your job is to teach; the student's job is to learn.

c. **To teach means to direct the learning process.** You are an instructional aid to the learner. You are to help learners as they attack the learning situation. One of the first things you need to do is clarify the objectives of the learning situation. This, in turn, helps the student set realistic learning goals. In summary: You set the basis for the learning situation—the learning process.

2. The Administration and Management Function

a. As you fulfill this function, you will be involved in planning, managing, and operating an educational program. The program may be the second grade in your school, the middle school science course, the secondary mathematics course, or the vocational-technical course.

b. You will be expected to cooperatively help plan and promote educational efforts of the school.

c. You will be expected to plan, organize, and maintain physical facilities and instructional materials.

d. You can contribute to the effectiveness of your program and also the school by keeping your curriculum updated and adapted to the students who are enrolled in your classes.

e. You will be expected to prepare a yearly plan of lessons to teach (a sequenced course outline). A sample yearly plan is shown in Figure 1.

A yearly plan of lessons—a necessity

3. The Occupational/Subject Area Specialist Function

a. As the teacher, you are expected to be the source of knowledge and skill concerning the subject area you are assigned to teach.

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Prepare your individual professional development plan to include appropriate inservice education activities.

b. You are expected to participate in life-long learning. To be an expert in any field, one must be accurate and current in subject knowledge. One must also acquire new knowledge, skills, and attitudes to keep up with the innovations in education. Specifically, you will need to keep up with the changes and developments in science, technology, economics, and business as well as with local, state and national education policy changes.

c. Various inservice education programs have been established for the purpose of helping you keep up-to-date and, going beyond the present, of preparing you for the future. Participate in these inservice activities.

d. A wise move is for you to prepare an individual professional development plan for yourself. You can get assistance with this important effort from *your immediate supervisor.*

4. The Student Counselor Function

a. An effective teacher is a friend to the student. In some instances, the teacher serves in the role of substitute parent.

b. Be prepared to provide guidance to students who have concerns about careers/vocations.

c. Other effective behaviors a teacher should show for the students:

- Show understanding and sympathy when working with students.
- Be friendly and courteous in relations with students.
- Help students with personal as well as educational problems.
- Commend student effort and give praise for work well done.
- Encourage students to try to do their best.
- Seek information about the interests and opinions of students.
- Smile at students and laugh with them.
- Develop effective listening skills.
- Create a caring atmosphere.
- Encourage students to work through their own problems and evaluate their accomplishments.

Figure 1

Sequenced Course Outline

An Example from
Program: Agricultural Production
Agriscience I Course

Unit 6. Agricultural Business Management — Week: 10-12
- Subunit 6.1 – Using business records
  - Competency 6.1.1 – Keep a complete set of records
    - 6.1.1.1 – Develop an SAE plan
    - 6.1.1.2 – Write an agreement
    - 6.1.1.3 – Prepare an enterprise budget
    - 6.1.1.4 – Maintain inventory records
    - 6.1.1.5 – Calculate net worth

Unit 5. Agricultural Mechanics Science — Week: 13-15
- Subunit 5.2 – Working with hot metals
  - Competency 5.2.4 – Weld with electric arc welder
    - 5.2.4.1 – Identify types of metals
    - 5.2.4.2 – Use an arc welder

Unit 3. Animal Science — Week: 16
- Subunit 3.1 – Introducing animal industry
  - Competency 3.1.1 – Rank industry according to economic importance
    - 3.1.1.1 – Determine opportunities in animal industry

Unit 3. Animal Science — Week: 17
- Subunit 3.2 – Getting started in livestock production
  - Competency 3.2.1 – Select animals
    - 3.2.1.1 – Identify breed characteristics
    - 3.2.1.2 – Identify parts of animal

Unit 5. Agricultural Mechanics Science — Week: 18-23
- Subunit 5.3 – Constructing small projects
  - Competency 5.3.1 – Work with wood
    - 5.3.1.1 – Identify grades of lumber
    - 5.3.1.2 – Demonstrate use of hand tools
    - 5.3.1.3 – Demonstrate use of power tools
    - 5.3.1.4 – Identify wood fasteners
    - 5.3.1.5 – Calculate board feet
    - 5.3.1.6 – Interpret project drawing
    - 5.3.1.7 – Complete bill of materials
    - 5.3.1.8 – Construct a project

Unit 5. Agricultural Mechanics Science — Week: 24-26
- Subunit 5.6 – Operating equipment
  - Competency 5.6.4 – Operate a tractor
    - 5.6.4.1 – Maintain tractor
    - 5.6.4.2 – Operate tractor without attachments

Chapter 2
How Should I Plan My Lessons?

Be a Teacher, Not a Teller

1. What Is Teaching?

a. Teaching is directing the learning process. There are four basic steps in this process:[1]
   1) Selecting/Presenting stimuli
   2) Receiving stimuli
   3) Perceiving stimuli
   4) Acting on perceptions. (Learning occurs as a result.)

b. Your job as a teacher is to take the students through these four steps as often as needed to cause the desired behavioral changes.

To teach means to direct the learning process.

Four steps in the learning process:
1. *Selecting and presenting stimuli*
2. *Receiving stimuli*
3. *Perceiving stimuli*
4. *Acting on perceptions*

2. What Is "Good" Teaching?

a. Good teaching is that which causes relatively permanent, desirable changes in the student—changes in thinking, judgment, reasoning, communication, creativeness, attitudes, appreciations, understanding, and manipulative skills.

b. Good teaching causes students to approach learning with eagerness.

Good teaching brings about desirable changes in the learner.

3. What Is Learning?

a. To learn is "to be able to do something you have never done before, and to remember it well enough to do it again." Learning means there has been a change in the learner's behavior. The change is in the cognitive, psychomotor, and/or affective domain of learning.

b. Desired changes in behavior are listed in the curriculum guide for each course or program.

To learn means to have a change in behavior—cognitive, psychomotor, and/or affective domain.

Desired behavior change = competency listed in the curriculum for the course or program

4. What Are Some Basic Learning Principles?

a. There are some basic principles of learning which a student should understand and use: [2]
   - Learning depends upon motivation.
   - Learning depends upon a capacity to learn.
   - Learning depends upon past and current experience.
   - Learning depends upon active involvement of the learner.
   - Learning is enhanced by problem solving.

Study, understand, and use the nine basic principles of learning when you plan and teach.

1 A more detailed explanation of the learning process is found in Appendix A.
2 A more detailed explanation of these nine learning principles is found in Appendix A.

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What the student ultimately learns depends on the student's interpretation of the situation.

- Learning effectiveness is dependent upon feedback.
- Learning is enhanced by an informal atmosphere.
- Learning is augmented by novelty, variety, and challenge.
- Learning is enhanced when a person knows what new behavior is expected of him or her.

Study, understand, and use principles of interest to help motivate your students to learn what you want to teach.

b. There are several primary principles of **interest**. All interest apparently has its origin in so-called natural impulses, urges, or drives. The most useful are activity, love of nature, curiosity, creativeness, gregariousness, want for approval, altruism, self-advancement, competition, and ownership.
   - What is of interest to us is what affects us personally, others about us, or humanity at large.
   - Interest increases with an increase in related knowledge of a subject, provided such knowledge is well understood.
   - Interest increases with the acquisition of a given ability or skill.
   - Interest flows, or spreads, from an interesting thing into an uninteresting thing whenever the two are clearly connected in thought.

Thinking is more interesting to students than memorizing facts.

c. There are secondary principles of interest.
   - Thinking is essentially interesting; memorization, uninteresting.
   - Interest is contagious in the sense that one person may "get it" from another.
   - Interest is strengthened by a sense of progress.
   - Interest is created and sustained by a state of suspense.
   - An ideal, when fully accepted, becomes a new interest center from which interest will spread to other connected things.

The novel and unexpected are interesting.

   - The novel and the unexpected are interesting.
   - Humor creates interest.

5. What Is Lesson Planning?

"Plan your work, and work your plan." This applies to your lesson, also.

a. Lesson planning means thinking through before you teach what you propose to take place in the classroom and/or the laboratory.

Think through your lesson first, then write down your planning thoughts.

b. Lesson planning should occur before you write your lesson plan.

6. What Is a Lesson Plan?

Choose a method of teaching that will help you best teach the skills, attitudes, and understandings contained in your lesson plan.

a. A lesson plan is a **written** step-by-step account of what you propose to take place in the classroom and the laboratory.
b. There are many styles or formats for lesson plans.
c. A lesson plan format should enhance the method of teaching chosen to take the students through the learning process. Ten possible methods of teaching are found in Figure 2.

7. What Is Included in a Lesson Plan?

a. Regardless of the subject matter being taught (e.g., 4th grade science, 8th grade math, 10th grade social studies, auto body work), a lesson plan should answer these four questions:

1) **Where are we now?** What do the students already possess in knowledge and skills related to the lesson topic?
2) **Where are we going?** What are the students supposed to be able to do at the end of the lesson that they could not do before?
3) **What steps do we need to take to get there?** What learning experiences should I provide to achieve the planned outcomes of the lesson?
4) **How will we know if we have arrived?** Have the students changed in the planned skills, attitudes, and/or understandings specified in the performance objective?

Four planning questions:

- *Where are we now?*
- *Where are we going?*
- *What steps do we need to take to get there?*
- *How will we know if we have arrived?*

b. These four planning questions can be converted to statements, or, to be more specific, as parts of a lesson plan.

c. Figure 3 illustrates the four planning questions (Column A) and their conversion to parts of a lesson plan (Column B). Column C provides information about the subdivisions of each part or step.

d. The four parts or steps of a lesson plan, therefore, are:

I Preparing to Teach
II Presenting the Lesson
III Helping Students Apply Concepts/Principles/Skills
IV Evaluating Student Learning

Four parts or steps of a lesson plan:

- *Preparing to Teach*
- *Presenting the Lesson*
- *Helping Students Apply Concepts/Principles/Skills*
- *Evaluating Student Learning*

e. A more detailed sample lesson plan format that uses the above four parts or steps is given in Figure 4. The format is based on the problem-solving approach explained in Figure 2 (Method 10).

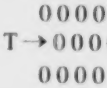
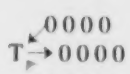
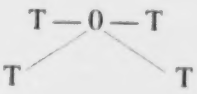
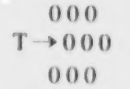
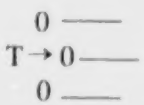
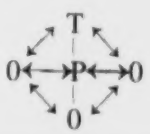
f. Figure 5 is a sample lesson plan designed to teach students how to use a microscope. The plan is constructed using the four parts or steps. It also uses the problem-solving approach explained in Figure 2 (Method 10).

Study the sample lesson plan format and the sample lesson plan for guidance in your planning and writing.

More in-depth information about lesson planning and learning strategies can be found in the publication by L. Hedges, *Teaching for Connection: Critical Thinking Skills, Problem Solving, and Academic and Occupational Competencies*. 1996.

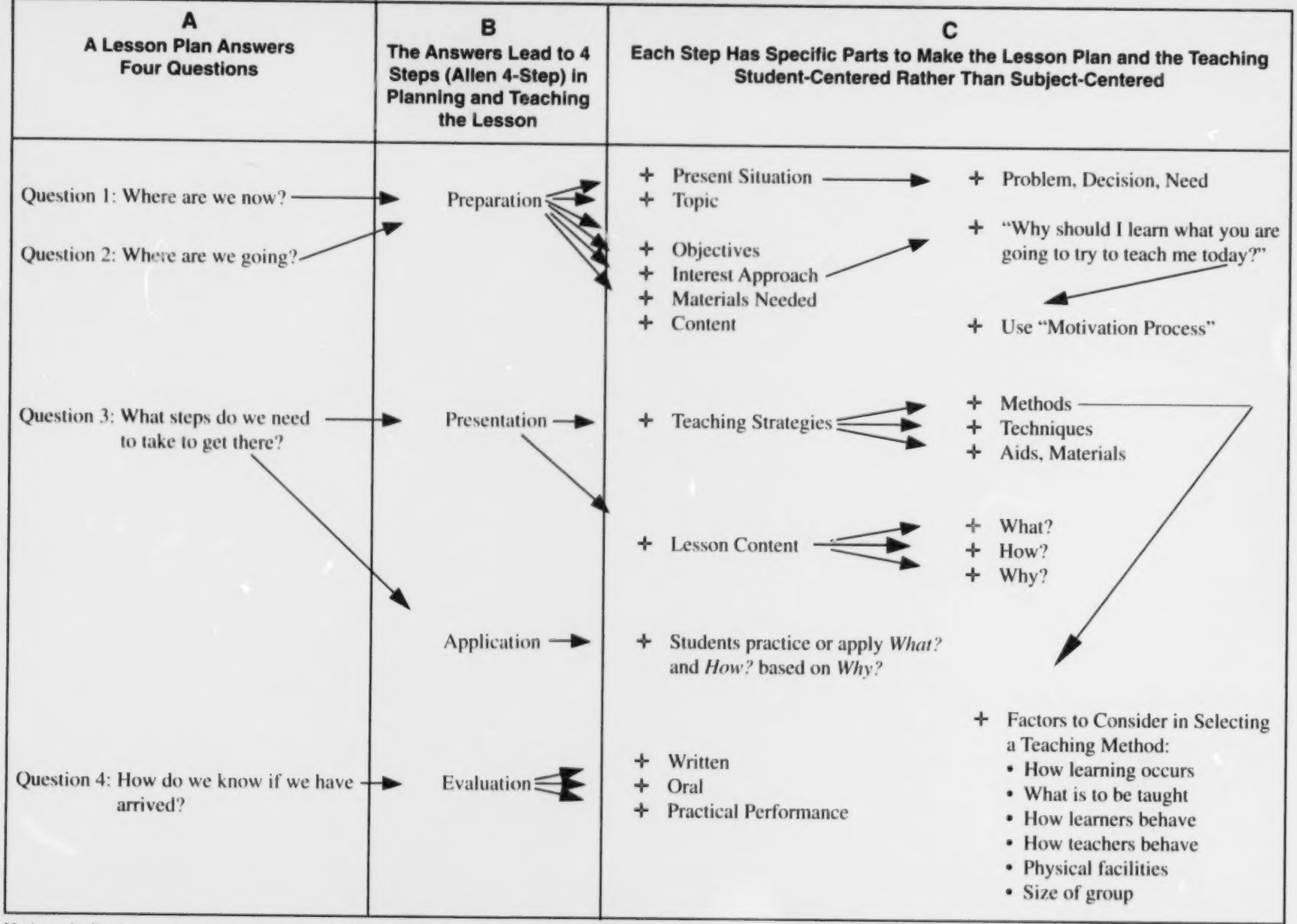
Figure 2

Methods of Teaching

Method	Chief Characteristic	Interaction Pattern	Advantages	Disadvantages
1. Lecture	Information-giving		Information is concentrated. Good organization of material.	Relative passiveness of students
2. Question and Answer	Questioning by students, or questioning by teacher		Student response	Formal in nature; threatening or boring; noncreative
3. Discussion: a. Socratic b. Leader-centered c. Group-centered	High degree of group interaction		Student participation; interest; use of experience	Loose organization
4. Project	Investigation of problem as a whole through cooperative effort		Group or individual responsibility; actual experience; interest; accomplishment	Wasted effort
5. Laboratory	Working with materials		First-hand experience; guided practice; multi-sensory experience	Time consuming
6. Apprenticeship	Learning by doing under tutelage		Practical application	Limited to experience of leader
7. Demonstration and visual aids	Illustration of processes by teacher		Visualization of process	Limited participation
8. Individual investigation a. Undirected b. Directed	Trial and error		Immediacy	Lack of inaction
9. Drill	Practice		Repeated experience	Boredom; overtraining
10. Problem solving	Decision making		Creative; leads to action; develops democratic abilities	Requires supply of up-to-date information

T = Teacher 0 = Student P = Problem/Decision

Figure 3 **The Student-Centered Planning/Teaching/Learning Process**


A
A Lesson Plan Answers Four Questions
B
The Answers Lead to 4 Steps (Allen 4-Step) in Planning and Teaching the Lesson
C
Each Step Has Specific Parts to Make the Lesson Plan and the Teaching Student-Centered Rather Than Subject-Centered
Question 1: Where are we now?
Question 2: Where are we going?
Preparation
+ Present Situation
+ Topic
+ Objectives
+ Interest Approach
+ Materials Needed
+ Content
+ Problem, Decision, Need
+ "Why should I learn what you are going to try to teach me today?"
+ Use "Motivation Process"
Question 3: What steps do we need to take to get there?
Presentation
+ Teaching Strategies
+ Methods
+ Techniques
+ Aids, Materials
+ Lesson Content
+ What?
+ How?
+ Why?
Application
+ Students practice or apply What? and How? based on Why?
Question 4: How do we know if we have arrived?
Evaluation
+ Written
+ Oral
+ Practical Performance
+ Factors to Consider in Selecting a Teaching Method:
• How learning occurs
• What is to be taught
• How learners behave
• How teachers behave
• Physical facilities
• Size of group

Hedges, L. E. *Supervising the Beginning Teacher: An Affirming Approach*. 1989, p. 20.

Figure 4 **Sample Lesson Plan Format**

(School Name)
(Course/Program Name)

(Instructor's Name) (Location of Lesson) (Date)

I. Preparing to Teach

Unit (Name): (from curriculum)

Subunit (Name): (from curriculum)

Student Terminal Performance Objective: (see reference list)

Student Enabling Objectives: (see reference list)

The ***objectives*** answer the planning question, "Where are we going?"

Equipment, Supplies, and Other Resources: What is needed to teach the objectives of the lesson.

Present Situation: What do the students know already about the lesson content? What have their experiences been in relation to the lesson content? Are there students in the class who are "experts" in the lesson objective?

The ***present situation*** answers the planning question, "Where are we now?"

Interest Approach: Answers the student's question: "Why should I learn what you want to try to teach me today?" At this point in the lesson, use the *Principles of Interest* to help students see a need to learn what you want to teach. Also, keep in mind the nine learning principles discussed in *Some Basic Principles of Learning*, Appendix A.

II. Presenting the Lesson

Teaching Strategies:
- Methods
- Techniques
- Use of Selected Aids, Materials (see Appendix B)

Selected aids/materials can include discussion groups, lecture, demonstrations, supervised study, individual research, field trips, resource person, A/V presentations, computer-aided instruction, role playing, case problems, simulated situations, problem solving, and others.

Lesson Content:
- **What?** The content needs to teach the objectives. The content comes from the curriculum developed for your program/course. The curriculum is usually prepared by the local school.
- **Why?** The usefulness of the objectives; application in the real world.
- **How?** How to apply new skills, attitudes, and understandings.

The ***lesson content*** and strategies for teaching the content answer the planning question, "What steps do we need to take to get there?"

(continued)

III. Helping Students Apply Concepts/Principles/Skills

Students practice or apply *What* and *How* based on *Why*.

Applying activities also help answer the planning question, "What steps do we need to take to get there?"

IV. Evaluating Student Learning

You can use written quiz, oral quiz, instructor observation, practice test, written unit test, completed project, peer evaluation, lab peer supervisor evaluation, written report(s), portfolio presentation, performance test, etc. (See reference list for assistance.)

This ***evaluation*** step in the teaching process helps answer the planning question, "How do we know if we have arrived?"

Figure 5 **Sample Lesson Plan**

Toledo Agricultural Education Center

ANIMAL CARE PROGRAM

Key Steps
(Problem-Solving Technique)

Penny Collins
(Instructor)

I. Preparing to Teach

Unit: 5 – Clinical/Laboratory

Subunit: (topic) – **5.2 – Using and Maintaining Equipment**

Date/Time: October, 1-day lab

Competency/Student Terminal Performance Objective:

5.2.4 – Use a (given) microscope when given a specimen to identify. All items on the performance assessment must be rated acceptable. Items will include carrying a microscope, placing a slide on a microscope, focusing a microscope, identifying a teacher-given specimen, and preparing a microscope for storage.

Enabling Student Performance Objectives:

5.2.4.1 Carry a (given) microscope from storage to working area without damage.
5.2.4.2 Place a (given) slide on a microscope without damaging slide or microscope.
5.2.4.3 Focus a (given) microscope according to product guidelines.
5.2.4.4 Identify a (teacher-given) specimen correctly.
5.2.4.5 Prepare a (given) microscope for storage. Performance checklist must have all items rated *yes*.

Academic Competencies to Integrate into the Lesson:

Communications: 3.0.1 Demonstrate effective listening skills
2.0.9 Write legibly
2.0.14 Use correct spelling
3.0.6 Follow directions
Safety: 12 Prevent damage to tools, equipment

Materials Required:
1. Compound microscopes.
2. Prepared slides.
3. Handout of microscope diagram.

Situation: This is a class of 25 junior-level Animal Care students. A few students have used microscopes in other science classes. Most students have had little experience.

Interest Approach: (Teacher to students)

"How many of you have operated a compound microscope?"

"Under what circumstances did you use a microscope?"

"How important is it for you to know how to use a microscope safely and effectively?"

(Possible student responses)

1. Could check for parasite infestation
   a. Skin scrapings for mites
   b. Fecal samples for worm eggs
   c. Blood samples for heartworm microfilaria
2. I think we would need a microscope to do blood work.
   a. White blood cell count
   b. Red blood cell count
3. Microscopes are expensive. I wouldn't want to have to pay for one I accidentally broke.
4. The lenses are fragile. Could get damaged very easily.
5. We couldn't find what is in the specimen slide if we didn't do things right.
6.

"What problems have you experienced in using a microscope?"

(Possible student responses)

1. I couldn't get the microscope focused on what was in the slide.
2. I never did find what I was supposed to find.
3. My friend Inez bumped our microscope at our table with her books; the scope fell off the table and the casting broke.
4. I think the scope I was using had scratches on the lens or something, because I saw them on every slide.
5. Are scopes supposed to have lights on them? The one I used sure was dark where the piece of glass was that had the thing on it that we were supposed to see.

"What do we need to know or be able to do to solve and/or prevent these problems?"

(Possible student responses)

1. Know how to handle the microscope without damaging it.
2. I need to know how to get it focused.
3. Know the names of the parts, so that when you tell us to turn this thing or that thing, we'll know what you are talking about.
4. I think we need to know which of those lenses to use. What are those things you turn?
5. Who puts the microscopes away? Do you, or do we? If we do, then we need to know how to pick them up and put them on the storage shelves without hurting them.
6.

"Looks like you've done some excellent thinking and reasoning. OK. Let's take some time to go over procedures in handling and operating the microscope in order to prevent any damage that could easily occur. We also want to be able to locate and identify objects on the specimen slide. Some of you said you have had some experience in using a microscope. Would you share your experience with the rest of the class? Specifically, would you share the procedures that you remember in using a microscope? Also, how should a user protect the microscope? We know they are expensive. [Make notes of student contributions on chalkboard.] OK, thank you for sharing. What I'd like to do now is build on what the class members have shared with us, so we all know the procedures for using a microscope and also how to protect it from damage. While I'm demonstrating the correct procedures, I'd like you to help reason out the necessary procedures to follow. You may want to take some notes on the key steps in using the microscope. To help you, I'll put these key steps on the chalkboard."

II. Presenting the Lesson

Problem statement: "What procedures should we follow in using a microscope safely and effectively?"

"Let's start at the beginning when you first remove the microscope from the cabinet."

What to Do	How to Do It
1. Pick up microscope and transfer to lab station.	1. Use two hands: one hand firmly gripping arm of microscope, the other supporting base of microscope. Now, let's look at the sheet that has the diagram of the microscope. I will point out the other parts of the microscope. [Point out the part and say the name; have students write the correct name on their copy.]
2. Turn microscope on.	2. Remove dust cover, unwrap and plug in cord, turn light switch on.
3. Make sure the stage is turned all the way.	3. Rotate coarse adjustment down knob.
4. Make sure lens is on lowest objective.	4. Rotate nosepiece and click into position.
5. Place slide on stage.	5. Secure slide under clips with specimen centered.
6. Focus.	6. Look into ocular, rotate coarse adjustment to move body tube up. Rotate fine adjustment to "fine tune" the view.
7. Adjust lighting.	7. Rotate diaphragm to desired light level. (Less light is needed for low power; more light is needed for high power and thick specimens.)
8. Change to higher magnification.	8. Rotate nosepiece to next higher magnification and click into place. Rotate fine adjustment to "fine tune" view if needed. NEVER rotate coarse adjustment to refocus at higher magnifications. NEVER use high power on thick specimens.
9. Prepare to put microscope away.	9. Rotate nosepiece and click into position.
10. Turn the stage down all the way.	10. Rotate coarse adjustment.
11. Turn microscope off.	11. Turn off light switch, unplug and wrap cord. Replace dust cover.
12. Transfer microscope to cabinet.	12. Use two hands: one hand firmly gripping arm of microscope, the other hand supporting base of microscope.

III. Helping Students Apply Concepts/Principles/Skills

Working in pairs, each student will examine a slide with the letter "e". Have all students draw what they see in their field of view at various magnifications. Have available for students' viewing other slides that contain such things as hair samples, blood samples, parasites, and various body tissue.

IV. Evaluating Student Learning

Have students turn in their "field of view" drawings for a grade. Give them a brief quiz covering microscope handling and operation.

Checklist for Storing Microscope

		Yes	No
1.	Was the nosepiece rotated and clicked into position?	❑	❑
2.	Was the stage turned down all the way?	❑	❑
3.	Was the microscope turned off by using the light switch?	❑	❑
4.	Was the light cord unplugged and wrapped?	❑	❑
5.	Was the dust cover replaced?	❑	❑
6.	Were two hands used to carry the microscope to the cabinet?	❑	❑
7.	Was one hand used to firmly grip the arm of the microscope?	❑	❑
8.	Was the other hand used to support the base of the microscope?	❑	❑
9.	Was the microscope placed in the assigned location?	❑	❑
	Totals	❑	❑

Student _____

Date _____

Number of attempts: _____

Lesson adapted from Hedges, Lowell E., *Teaching for Connection: Critical Thinking Skills, Problem Solving, and Academic and Occupational Competencies*. 1996.

Performance Assessment

Using the Microscope

Use short phrases or sentences to answer the following questions.

1. Describe the location/position of the hands (both left and right) while carrying a microscope properly.

2. In what two situations will more light be required for viewing?

3. Which objective must you use when you begin viewing a specimen?

4. Where should the stage be before and after viewing?

5. On what objective should your microscope be positioned before you put it in the cabinet?

6. What part of the microscope do you rotate to adjust the lighting?

7. When should you use the fine adjustment?

8. In what two situations should you **not** use the coarse adjustment?

9. What procedures should you use to secure a slide on the stage?

10. What procedures should you use to protect a microscope during storage?

Presenting the Lesson

Here are several technical skills that will help you present your lesson so that your teaching will be student–centered. These techniques or skills will keep the lesson interesting to the students so that at the end of the lesson, desirable changes will have occurred in the students—changes in the cognitive, psychomotor, and/or affective domains of learning.

Keep your lesson student-centered.

1. Initiate and Maintain Interest.

a. Help the students see the importance of the lesson in terms of their needs. Help them understand the learning outcomes of the lesson. Use their existing interests as a link to your new activities. Help them recall past experiences or knowledge related to the lesson. "Go from the known to the unknown."

Help students see a need to learn.

b. Maintain student interest in the lesson by appealing to various student desires and values, varying the types of student participation. All students should have an opportunity for active participation at some time during the lesson. Respond positively to students who participate. Also, identify and respond to those who are not paying attention.

Maintain student interest in the lesson.

2. Stimulate Student Thinking.

a. Use questions to get student participation in the lesson. Too often, beginning teachers lecture and "tell" students rather than ask questions which can elicit answers from the students themselves. "Be a teacher, not a teller."

b. Use the kind of questions that will help students think and reason, make judgments, and analyze problem situations, rather than emphasize memorization. Higher order questions help students use ideas rather than just remember them.

Get students to think and reason.

c. Use "probing" questions. These questions require students to go beyond superficial "first-answer" questions. Ask students for more information and/or more meaning. Require the student to rationally justify a response. Bring other students into the discussion by getting them to respond to the first student's answer.

d. Give students time to think about your question. Do not be frightened by silence or pauses in classroom discussion. Silence is a powerful tool in the classroom. For example, pauses can be used after a question from a student to direct the question to another student with a look or gesture.

Use instructional materials that get and maintain interest.

3. Use Instructional Materials.

a. Select appropriate instructional materials (audiovisual equipment, software, the Internet, charts, samples, films, reference books, pamphlets, chalkboard, transparencies, etc.) for the lesson.

b. Use the selected instructional materials effectively.

c. Your entire classroom is also considered "instructional materials." It is part of the learning environment. Keep your room free of litter. Keep furniture neat and orderly. Make sure the room is comfortable and conducive to learning: not too hot or cold, and with fresh air, adequate lighting, and no distractions from inside or outside.

Use complete and effective communication techniques with your students.

4. Communicate Effectively With Students.

a. Give clear directions and explanations. Clarify directions and explanations when students misunderstand by using different words and ideas. Anticipate misunderstandings before students ask.

b. Use comments and questions from students in your teaching. Accept student responses in a positive manner.

c. Provide feedback to students throughout the lesson. Provide feedback on both correct and incorrect responses. Help students evaluate the adequacy of their own and each other's performance.

d. Use acceptable written and oral expression with your students. Your speech should be understandable (with correct pronunciation and enunciation) and correct in grammar. Your writing should be legible.

Maintain effective interpersonal relationships with your students.

5. Practice Effective Classroom Management and Guide Interpersonal Relationships.

a. Use variety and proper pacing of classroom activities. Use at least three changes of pace per hour.

b. Your verbal and nonverbal expressions should reinforce desirable student behavior. Speak politely to students. Be fair and impartial when dealing with them. Provide verbal feedback for acceptable as well as unacceptable behavior. Use language free of discouraging references when talking to or about students. Make your expectations about behavior clear to your students. Reinforce appropriate behavior. Overlook unimportant behavior. Attend to major disruptions quickly and fairly. Deal with the individual student who causes a disruption rather than the entire class. Violations should carry consequences appropriate to the student.

c. There should be evidence of congeniality and rapport between yourself and the students, and among students. Students should accept opinions of others and/or differ courteously. There should be an overall favorable "emotional tone" associated

with the teaching-learning situation. Demonstrate patience and understanding. Use language free of sarcasm and ridicule. Show patience with or feeling for students who need additional time or explanation. Show students by your actions that you understand their problems.

d. Maintain a high time-on-task rate and effectively use the available lesson time. Begin your lessons promptly. Avoid delays and irrelevant matters.

6. Provide Application and Practice.

a. You should bring your students to the point in the lesson where they can practice or apply what was taught. We could call this bringing "closure" to the lesson. Closure is more than a summary of the lesson content. It helps students see a link between past knowledge and the new knowledge presented in the lesson. Closure should provide students with a needed feeling of achievement.

Give students the opportunity to practice what you teach them. Repetition helps the learner retain new skills.

b. Student practice and application should be a part of the teaching/learning process.

7. Test on What Was Taught.

Make sure there is a three-way performance agreement

a. between student performance objectives,
b. content taught, and
c. evaluation test items.

Be sure there is a three-way performance agreement.

In other words, decide what student performance you want to achieve, then teach for that performance. Assessment techniques/items should agree with both content and student performance objectives.

A condensed version of these technical skills is found on the next page. This sheet is convenient to keep with you as you prepare and "practice teach" your lesson. An evaluator could also use this sheet while observing your teaching.

Note to evaluators: These seven skills include all of the 19 teacher competencies contained in the PRAXIS III materials used in a beginning teacher program. They are presented here in a different sequence, and some are combined.

More in-depth information and assistance related to teaching strategies and techniques (such as using instructional materials, using principles of learning, etc.) can be found in Appendices A, B, and C (Summary of Pedagogical Skills and Concepts; Selecting and Using Audiovisuals and Other Instructional Materials; and Model for Linking Planning, Teaching, Learning and Assessing Processes; respectively).

Performance in Key Areas of the Planning, Teaching, Learning and Assessing Processes – A Summary

I – Preparation and II – Presentation

1. **Initiating and Maintaining Interest**
   a. The teacher initiated the interest of the students in the lesson by helping them see the importance of the lesson in terms of their needs.
   b. The teacher maintained the interest of the students in the lesson by appealing to various student desires and values and varying the types of student participation.

2. **Stimulating Student Thinking**
   a. The teacher used questions and obtained student participation in the lesson.
   b. The teacher's questions helped the students think and reason, make judgments, and analyze problem situations rather than emphasized memorization.

3. **Selecting and Using Instructional Materials**
   a. The teacher selected appropriate instructional materials (audiovisual equipment, software, the Internet, charts, samples, films, reference books, pamphlets, chalkboard, transparencies, etc.) for the lesson.
   b. The teacher effectively used the selected instructional materials.

4. **Communicating Effectively With Students**
   a. The teacher gave clear directions and explanations; clarified when students misunderstood.
   b. The teacher accepted student responses in a positive manner; used responses in teaching.
   c. The teacher provided feedback to students throughout the lesson (to both correct and incorrect responses).
   d. The teacher used acceptable written and oral expression with the students. Speech was understandable (with correct pronunciation and enunciation) and correct in grammar. Writing was legible.

5. **Managing the Classroom and Interpersonal Relationships**
   a. There was variety and proper pacing in the classroom activities.
   b. The teacher's verbal and nonverbal expressions reinforced desirable student behavior.
   c. There was evidence of congeniality and rapport between the teacher and students and among students. They accepted opinions of others and differed courteously; there was an overall favorable "emotional tone" associated with the teaching-learning situation.
   d. The teacher maintained high time-on-task rates and used available lesson time effectively.
   e. The teacher maintained a positive learning environment; (considered *Maslow's Hierarchy of Needs*).

III–Application

6. **Helping Students Apply Concepts/Principles/Skills**
   a. The teacher brought the students to the point where they could practice or apply what was taught.
   b. Student practice and application were part of the teaching/learning process.

IV–Evaluation

7. **Evaluating Student Learning**
   a. The teacher used appropriate assessment of learning techniques to measure student competency levels.
   b. There was performance agreement between the student performance objective, the lesson content taught, and the assessment instrument/technique.

Source: Hedges, L.E. *Supervising the Beginning Teacher: An Affirming Approach*. 1989.

Chapter 4
How Should I Assess Student Learning?

What Is Assessment?

The dictionary gives us several words or phrases to help us understand the meaning of assessment: appraise, estimate, measure, rate, evaluate, value, judge worth of, determine significance.

We assess some thing, some action, some process, some product to obtain information.

Whatever word or phrase we choose, when we assess something, what we want is information. The kind of information we want basically determines the assessment techniques we will use.

Information needed determines assessment techniques.

As a classroom teacher, you will use this information—assessment results—for at least two major purposes: first, to identify the extent to which your students have attained knowledge and skills; and second, to determine how students reached or why they failed to reach expected outcomes.

Why Assess Student Learning?

Assessment serves important needs at all levels of the educational system and in the broader community. Assessment provides a means for the educational system to judge its progress and to make resource allocation decisions. Assessment encourages learning and provides the direction for improvement of instruction (Hedges & Axelrod, 1995).

Assessing student learning is important to learners, teachers, school administrators, and potential employers.

1. **Importance to Learners**
   a. Encourages learning and skill development.
   b. Serves to motivate student learning and provides a gauge of individual student progress.

2. **Importance to Teachers**
   a. Provides information to teachers for determining the strengths and weaknesses of their instruction.
   b. Provides information about the students. What students were able to master particular competencies or skills? What gave them the greatest trouble?

3. **Importance to Administrators**
   a. Provides information vital to decision making.
   b. Provides information necessary for resource allocation, facilities, staff development, and materials.

4. **Importance to Employers**
   a. Provides employers the information they need to help set standards that students should achieve.

b. In the results of the performance assessments, tells employers that students have the skills the employers want. (Hedges & Axelrod, 1995)

What Should Be Assessed?

We assess learning in academic skills, occupational skills, and employability skills.

Assessment of student progress in the classroom or laboratory must consider the following three skill areas to ensure that students are prepared for the world of work:

- **Academic Skills:** math, science, communications, social studies, etc.
- **Occupational Skills:** technical knowledge, performance skills, decision making, etc.
- **Employability Skills:** responsibility, social skills, self-management, work ethic, etc.

How Should I Assess Learning in the Three Skill Areas?

1. Assessing Learning in the Academic Skills Area

a. Academic skills usually involve the cognitive domain of learning—knowing certain information.* The cognitive domain includes performances that require knowledge of specific information, e.g., the principles, concepts, and generalizations necessary to problem solving. **We are primarily concerned that students have the knowledge required to perform the task.**

Do students have the knowledge required to perform the assigned task?

There are five simple steps in developing test items in the cognitive domain.

b. Developing test items to assess learning in the cognitive domain requires five simple steps:

1) Identify the specific learning objectives to be tested. List those objectives on a sheet of paper or a planning form.
2) Review the related lesson plans or learning packages, if necessary, to identify additional, more specific content to be included in the test.
3) Determine how many test items to develop. This should be determined by the amount, difficulty, and importance of the learning objectives to be tested.
4) Select the test item type(s): true/false, multiple choice, matching, short answer, or essay. Since test items are based on the learning objectives, careful examination of the action statement will suggest the level of knowledge to be achieved. This, in turn, will suggest a test item format that will be the most appropriate. Figure 6 provides some direction in selecting the appropriate test category.

* Additional information about assessing learning in the cognitive domain can be found in *Assessing Learning*, by Hedges and Axelrod, 1995.

5) Consider such factors as response time required by students, scoring time required to grade and analyze answers, the testing environment, and probability of guessing the correct answer. Once you have decided on the best test item format, the next step is actual writing of "good" test items. Figure 7 gives important development rules for each type of test item.

After deciding on the best test item format, write "good" test items.

2. Assessing Learning in the Occupational Skills Area

a. Many occupational skills involve the psychomotor domain of learning—performing certain physical activities.* The psychomotor domain measures the skill performance of the student. The performance will involve the manipulation of objects, tools, supplies, or equipment. **Concern here is that the student has the necessary neuromuscular coordination to perform the task.**

Do students have the necessary neuromuscular coordination to perform the assigned task?

b. In contrast to tests which measure cognitive abilities, performance-based tests measure a student's ability to do something. A student's ability to perform a manipulative (motor) task is evaluated by observing and judging his or her behavior. In the test, the student is directed to perform a task. Then his or her performance is evaluated against a predetermined standard.

c. Many performance-based tests include a rating scale checklist which the instructor uses to measure the student on the actual output defined in the objective.

Use a checklist when assessing student performance in the psychomotor domain.

d. Formats for performance tests vary. However, most of these measures consist of the following components:
   - task statement
   - performance conditions under which test will be administered
   - performance standard(s)
   - test directions
   - scoring procedures
   - criteria checklist

3. Assessing Learning in the Employability Skills Area

a. Employability skills are needed for effective management of work and family commitments. These skills involve the attitudes, values, and appreciations that result in a person being a capable employee. This person, among many actions, works hard to become excellent at doing assigned tasks. He/She displays high standards of attendance, punctuality, enthusiasm, vitality, and optimism in approaching and

Specific skills are required for effective management of work and family commitments.

* More in-depth instructions for developing performance tests in the psychomotor domain can be found in *Assessing Learning*, by Hedges and Axelrod, 1995.

completing tasks. Attitudes, values and appreciations belong in the affective domain of learning.

b. In the affective domain, we measure performance required to demonstrate feelings, attitudes, or sensitivities toward other people, ideas, or things.* **We are most concerned here that the student will DO the task after learning how to do it.**

c. Usually there is no direct way to assess students' attitudes (for example, whether they enjoy working with others). Items for affective domain objectives generally require that either the students state their preferences or that the instructor observes the students' behavior and infers their attitudes, values, or appreciations. For example, if a student voluntarily helped other students on three different occasions, the instructor could infer that he or she enjoyed helping others. From these stated or observed behaviors, inferences about attitudes can be made.

*Will students **do** the task after learning how to do it?*

We observe students' behavior and infer from it their attitudes, values, and appreciations.

* For more information about assessing learning in the affective domain, refer to Hedges and Axelrod, *Assessing Learning*, 1995.

(Adapted from Hedges & Axelrod, *Assessing Learning*, 1995)

Figure 6 Type of Behavior and Related Test Item Categories

Type of Behavior from Objective	True/False	Multiple Choice	Matching	Short Answer	Essay	Practical or Performance
State	✘			✘	✘	
Identify		✘		✘		
Discuss				✘	✘	
Define				✘	✘	
Select	✘	✘	✘			
Discriminate	✘	✘	✘			
Solve	✘	✘		✘	✘	
Develop				✘	✘	
Locate	✘	✘	✘	✘	✘	
Construct				✘	✘	✘
Generate				✘	✘	

From Yalin, H. Ibrahim, et al. *The Handbook for In-Service Education, Part I.* 1995. p. 47

Figure 7 Choosing the Appropriate Assessment Measure

Type of Test	Advantages	Disadvantages	Development Rules
True/False	* Requires only a single response from the learner. * Quick scoring of test items.	* More than one question needed. * Student has a 50% chance of guessing correct answer.	* Be sure the item is definitely true or false. * Avoid determiners such as *always, never.* * Avoid quotations or stereotypes. * Make statements brief and concise.
Multiple Choice	* Requires only a single response. * Quick scoring of test items. * Student has 25% chance or less of guessing correct answer. * Requires student to evaluate more than one item at a time.	* Several questions needed to assess small amount of information. * Requires only recognition of the correct answer; not a good measure of recall.	* Avoid making the correct alternative obviously different. * Make response alternatives mutually exclusive and similar in length. * Make opinions and the stem grammatically parallel and consistent. * Do not use "none of the above" as a response. * Avoid using "all of the above" as an option with a *best answer* stem. * Avoid redundancy in alternatives by stating once in the stem.
Matching	* Requires only a simple response. * Quick scoring of test items * Can adjust number of items to be assessed.	* Requires only recognition of the correct answer.	* Keep everything relating to an item on a single page. * Identify stimuli with numbers and responses with letters. * Make the two lists unequal in number. * Explain the basis for matching; give clear directions. * Use phrases or words in stimuli column rather than complete sentences.
Short Answer or Completion	* Requires a response of information recalled directly from memory.	* Answers are more difficult to score. * More than one answer may be correct.	* Use direct questions or incomplete declarative sentences. * Require short, definite, explicit answers. * Write test items so only one word or phrase correctly completes the sentence. * Omit only key words or phrases you want the learner to remember. * Avoid dependent questions/sentences in which one question cues the answer to another.
Essay or Open-ended Items	* Requires a response of information recalled directly from memory. * Assesses much knowledge with only one question.	* Answers are more difficult to score because they may contain many words, phrases, or paragraphs. * Limited number of questions can be asked in usual test-taking time.	* Describe exactly what is to be done so experts can agree on correct response. * Use more than one essay question. * Set up a systematic scoring procedure before giving the test.

(continued)

Figure 7 *(continued)*

Type of Test	Advantages	Disadvantages	Development Rules
Practical or Performance	* Requires an action response, using all from gross bodily movements to the more finely coordinated movements. * Involves cognitive and affective domain learnings.	* Requires the testing situation to have the same equipment, content, sequence, and conditions as in the instructions. * More time and expense required than for a paper-and-pencil test.	* Determine exactly what should be tested. * Determine whether process, product, or both are critical. * Design the assessment tasks. * Specify performance criteria. * Determine how performance criteria or test items will be scored. * Determine the minimum acceptable score. * Draft the test. * Try out the test. * Conduct the performance test.

From Yalin, H. Ibrahim, et al. *The Handbook for In-Service Education, Part I.* 1995. p. 47

Chapter 5
How Should I Manage Teacher-Student Relationships?

Causes of Poor Relationships

1. General Causes of Unacceptable Student Actions

a. Teacher behaviors, school environment, home environment, and student personality all interact to either prevent or guarantee unacceptable student actions.

School and home environments impact positively and negatively on student actions.

b. The teacher is the first line of authority in the classroom and the school. How the new teacher presents him/herself on the first day determines much of his/her future control. For the new teacher as well as experienced teachers with new classes, a poor start during the first few weeks of school can virtually guarantee undesirable teacher–student relationships, as well as student–student relationships.

Some teacher behaviors cause unacceptable student actions.

c. Failure of students to cooperate in following rules and procedures and successfully completing all work assignments leads to unacceptable relationships and ultimately less learning on the part of the students.

Establishing Positive Relationships

2. Teacher Behavior Influences Classroom Learning.

a. Both the teacher's personality and behavior influence the behavior of students. Therefore, teachers must attempt by their behavior to create a classroom climate conducive to learning. Such a climate eliminates most student behavioral problems.

Your behavior should provide a climate for student success.

b. Some specific teacher behaviors that have a positive effect on students' behaviors are:

- Respect for students. Some students suffer from damaged self-esteem. They have not been successful in school. When a teacher demonstrates that he/she cares about these students, positive reactions occur. So, be warm, kind, and friendly, but never familiar.

Show respect for your students.

Show that you care about your students.

- Permitting open inquiry into the lesson. "Be a teacher, not a teller."

c. Teacher verbal behaviors can have a profound influence on student behavior. Several teacher verbal behaviors can be classified as learner centered:

Support students both verbally and nonverbally.

- Develop a warm sense of humor. Enjoy a joke, but end joke time quickly. Judge carefully when the time is ripe for using your sense of humor in a given class. Do not allow wisecracks or personal remarks.

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- Do not lose your temper *often*.
- Use learner-supportive statements or questions.
- Use acceptant or clarifying statements or questions.
- Use problem-structuring statements or questions.

All three of these teacher responses reflect a non-threatening teacher role.

3. Establish Classroom Behavior Standards.

a. Students welcome reasonable discipline and have respect for teachers who follow a consistent policy.

Make perfectly clear to the students what you expect of them in terms of behavior.

b. Students must have a clear understanding of what is expected of them as they work individually and in groups. Set limits in your class. Expect students to operate within these limits. Recognize that setting limits gives pupils a sense of security.

c. Some recommended practices for the classroom and/or laboratory are:

- Develop and clearly communicate behavior standards. Keep classroom rules short, simple, meaningful and positive.
- Establish rules for class behavior through class discussion. Seek to gain acceptance by all students. This will happen when students and teacher jointly formulate the rules.
- Assess how well the behavior standards have been communicated.

Rules should be established through class discussion and should be accepted by all students.

- Assess the effectiveness of the behavior standards. Have a definite "clearing house period" to discuss problems that affect all members. Then, together, the students and teacher can develop or reestablish behavior standards conducive to an effective learning environment.

4. Provide Motivational Activities and Conditions.

a. Many successful, experienced teachers realize that learners (adolescents in particular) need to be motivated to fulfill their potential in life. Experts agree that one of the best motivators is a teacher who is alive with enthusiasm for the subject. Dedication to teaching, patience, and a sincere interest in students' well-being are some positive teacher attributes. For more details about these attributes, study Figure 8.*

To help motivate students to learn, be enthusiastic about your subject!

b. Other motivational recommendations:

- Design activities that allow students to release suppressed energy and emotions.
- Vary activities to reduce boredom and to enhance student interest.
- Show interest and concern in student work; give personal help when needed.

* Figure 8 explains three competencies that are essential if you want to be a master teacher: Being "With It," Having an In-Charge Image, and Being Student-Centered.

- Be clear.
- Promise students a successful year. Invite success!
- Do not rush; work at a reasonable pace.
- Use a variety of methods and materials.
- Plan your teaching carefully and be well prepared. Always have work prepared for the entire period.
- Make goals and objectives clear to students.
- Involve students in the lesson through the use of discussion, discovery approaches, individual assignments, and, at times, group planning.
- Give students the responsibility and assistance necessary to identify and develop goals.
- Encourage feedback—a necessary part of the communication process.
- Inform students how they are going to be graded. This knowledge reduces student anxieties.

Create an environment that permits student ownership of the lesson.

More Ways to Prevent Misbehavior

1. Establish Rapport With Your Students.

- Let students know you are working for their sake. Praise a student. Recognize appearance, performance, friendly manners, etc.
- Take interest in each student's personal problems and concerns. Be genuine about this or it will not work.
- Give students an opportunity to help.
- Treat all students equally and with respect.
- Do not require the same response from every student.
- Allow for various abilities as well as interests when making assignments.
- Satisfy the needs of individuals to make a satisfactory contribution to the group.
- See that each student gets a chance to feel important and useful by performing some constructive service for the teacher or for the group, preferably both.

Take a genuine interest in each student.

2. Develop Class Morale and Loyalty.

- Organize activities like a field trip that involve the whole class.
- Allow for group decision making and responsibility.
- Communicate your positive expectations of each student.

Involve the whole class in activities.

3. Deal With Misbehavior in an Impersonal Manner.

- Let misbehaving students know that you do not dislike *them*, but their behavior.

Be impersonal in dealing with misbehavior. Dislike the behavior, not the student.

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- Permit the student the opportunity to talk about the behavior in question. You may find the reason for his/her misbehavior.
- Refer to the principal, counselor, or dean those students whose misbehavior is repeated even after many conferences.

4. Communicate Effectively With Students.

Be sure students understand the directions as well as you do.

- Be aware of the **C.O.I.K. fallacy** in the communication process. (C.O.I.K. = Clear Only If Known.) Don't be guilty of ignoring it. If students have not had the same experiences you have had, they will not understand your incomplete directions and/or explanations. Just because *you* know does not mean anyone else does.
- Give students an opportunity to express themselves.

5. Learn to Recognize Situations Which Lead to Discipline Problems.

Be alert for potential discipline problems.

- tardiness to class
- disorder in a classroom
- failure of students to settle down to work when the bell rings
- disobedient and insolent students

6. Develop Only Those Rules Necessary for Efficient Instruction.

Remember two main resolutions of teachers.

Two brief but inclusive resolutions:

- ❍ ***No one will prevent me from teaching someone who wants to be taught.***
- ❍ ***No one will prevent someone who wants to learn from learning.***

7. Change the School Environment.

Make a positive learning environment.

- Make sure you can see students at all times (no "blind spots").
- Use the classroom, shop, or laboratory arrangement best suited for instruction. Have definite places for materials, chairs, and tables.
- Provide a clean, attractive room; it provides a sense of security and discipline.

8. Be a Positive Example With Your Appearance and Actions.

Be a positive example with your voice, actions and appearance.

- Avoid noticeable mannerisms.
- Watch your voice. It should be clear, firm, and pleasant. Vary its tone and intonation. Do not talk continuously. Remember, your voice can advertise your insecurity.
- Watch your own appearance. Dress neatly and attractively. Avoid wearing distracting or provocative clothes.
- Be approachable, friendly, and willing to listen.
- Be courteous; demand courtesy to you and to other students.
- Do not embarrass a student.
- Refrain from criticism of other teachers or administrators, and do not permit it from students.

In summary, good classroom discipline should not be equated with being strict, but should be recognized as a cause-and-effect relationship. Students should be made aware that certain types of behavior will cause unpleasant results, while others will elicit teacher recognition and praise. If you use this cause-and-effect approach, most students will naturally develop good behavior attitudes and response. You can achieve good classroom control, acceptable student conduct, and real student achievement if you are firm, fair, friendly, consistent, and prepared.

Primarily adapted from "Student Behavior Problems," by Pierce Farragher. *The Agricultural Education Magazine*. Henry, IL: M&D Printing Co. September 1989, Volume 62, Number 3, pp. 10-13.

Figure 8

Three Essential Competencies Needed by a Master Teacher

1. Being "With It"

- Is in tune with surroundings
- Anticipates students' actions and reactions
- Is aware of direction and pace of the class
- Intervenes appropriately

2. Having an In-Charge Image

- Directs momentum and direction of class activities.
- Has appropriate degree of control and organization.
- Is well-prepared and knowledgable
- Likes to teach; is self-confident

3. Being Student-Centered

- Builds lesson around students' present and future needs
- Creates student ownership of learning activities
- Creates nurturing, loving, learning atmosphere
- Teaches students the subject, not the subject to students

Hedges, Lowell E. *Anticipation and Preparation: A Teacher's Survival Guidebook*. 1997.

Chapter 6

How Should I Function as a Faculty Member in the School and Community?

Working Within the School System

1. Identify and Use the Chain of Command for Your School.

Follow the chain of command in your school.

a. Learn who your administrators are. Learn the hierarchy of positions.

b. Familiarize yourself with the duties and responsibilities of each administrator.

c. Ask your immediate supervisor or administrator for assistance. Do not wait until a situation gets out-of-hand. They are there to assist you in your teaching responsibilities. Asking for help does not mean you are unsuccessful as a teacher. It means that you are concerned about being an effective teacher in that school system.

2. Learn and Follow Rules, Regulations and Policies in Your School.

Learn and follow the policies in your school.

a. Most schools will give the new teacher a copy of rules, regulations, and policies that are in force in the school. If you do not receive a copy, ask your immediate supervisor or administrator for one, or at least a "loaner" copy to read.

b. If you do not understand a rule, regulation or policy, ask your immediate supervisor or administrator to explain it to you. Do not hesitate to ask questions if you don't understand. Understanding now will avoid possible embarrassment or problems later in the school year.

School customs are important. Follow them.

c. Most schools have set procedures for teachers to follow in making requests for supplies, keeping records, and making reports. Find out early what these procedures are and follow them. Be prompt in your "paperwork." Develop a reputation for being accurate and on time with your reports and other paperwork.

3. Get Acquainted With Your Fellow Teachers.

Get acquainted with the other new teachers as well as the experienced teachers as soon as you can.

a. There will be other new teachers in your school system. They will have the same questions and concerns as you do. Introduce yourself to them. Learn their names and subject areas.

b. Get acquainted with the experienced teachers in the school. They have survived being a "new teacher." They have much wisdom to share with you. Ask them how to function as a teacher in that school.

Follow accepted traditions of the school.

Participate in school functions.

4. Be Ready and Willing to Help Out With School Activities.

a. You will be more quickly accepted as a member of the faculty if you make an effort to learn the "traditions" of the school.

b. Determine how you can best help out with these traditional activities. You have special talents and abilities that you can contribute. These will be welcomed by other faculty members and the administration.

c. Some activities will be scheduled after school hours. It is part of your professional responsibility to participate as much as you can without adversely affecting the quality of your classroom teaching.

Working in the Community

Serve your school and community through a support group.

1. Participate in School–Community Groups.

a. Some schools have organized support groups comprised of parents and teachers. Identify the existence of any such groups. Learn their purposes.

b. If you believe that you can contribute to the purposes of these support groups, join at least one. Determine how you can best serve the interests of the community of which you are now a part.

Support local businesses.

2. Shop in Local Stores.

a. Business people and shop owners will appreciate your business.

b. When you patronize local stores, the owners will realize that you intend to be part of the community, not an outsider who rejects the community because it is not your family home.

Help local business leaders give tangible support to the schools.

3. Get Acquainted With Local Business Leaders.

a. Most business leaders want to support the schools. Sometimes they do not know the most effective way they can help.

b. When you get acquainted with the leaders, you can better explain the needs of the schools, what the schools are attempting to do in teaching the students, and how local business will benefit from well-educated citizens.

c. Many store owners will provide you an opportunity to visit the store with your students so that they can learn more about their community and about the various vocational careers available to them.

d. When you are acquainted with these business leaders, ask them if you can display the work/achievements of your students in their places of business. Your students and their families will appreciate the recognition, and the businesses will appreciate the extra shoppers.

4. Get Acquainted With "Parent Types."

a. Considering your age as you begin your career as a teacher, you have already developed human relations skills that enable you to work with adults in a mutually satisfactory and productive manner. You know how to get along with various personality types in the work-world.

You already have some people skills.

There is no need in this publication to provide tips and techniques for the typical interactions you will have with adults as you perform your role as a teacher. But some tips and techniques **are** in order concerning a different type of individual you will encounter: the parents of your students.

You may not be familiar with certain parent-types of adults.

b. Why is this "advance warning" important to you as a beginning teacher? Remember the old adage, "Forewarned is forearmed." Learning about certain "parent types" will prevent headaches, heartaches, frustration, threatening experiences, and messed-up relationships. In other words, if you know what to expect before you encounter these parents at parent–teacher conferences, at school functions, or in home visits, etc., you will be better prepared. You will be able to leave the encounter with your professional ego intact and your relationship with the parents at a positive level.

Knowing about certain parent-types will prevent many problems.

c. There are several reasons why adults in the role of parents act the way they do. Most parents consider their children an extension of themselves. So, it is very easy for parents to get defensive when their child is being discussed. This does something to their listening ability. Any criticism of the child is a criticism of the parent. That is why you need to tune in to that frame of reference when you discuss a student with the parents.

*Parents easily get defensive when **their** child is being discussed.*

Learning Parent Stereotypes

Parent stereotypes:
Self-oriented
Punitive
Anxious, Over-Involved
Gossiping
Complaining
Hostile, Aggressive
Overwhelmed
Indifferent

The following are some **parent stereotypes** that are particularly difficult to deal with.

1. The Self-Oriented Parent

Characteristics:

- The parent's response to any of your comments is self-centered. For example: "I can understand my child's poor math grade, because I could never do math when I was in school." What is the parent saying? "The child is me."
- The parent is probably saying the same thing at home around the child. The result? Setting up a false prophecy. The child will really believe he/she cannot do math.

Self-oriented

How to deal with this type:

- Ask the parent if she/he has asked the child how he/she feels about it (i.e., doing math).

2. The Punitive Parent

Punitive

Characteristics:

- If you give this parent a negative observation about the child's grades, behavior in class, or cooperation, this parent's response will be something like, "Don't worry about that. I'll take care of that when I get home." The problem? When the parent does "take care of it," the child quickly understands that the discipline directly followed the meeting between the teacher and parent. The result? A negative impact on the teacher's relationship with the child.

How to deal with this type:

- Convince the parent that "taking care of that at home" will usually mess up your relationship as teacher with the student. In a situation like this, you will often find that your relationship with the student is fragile at best.

3. The Anxious, Over-Involved Parent

Anxious, Over-Involved

Characteristics:

- These parents have a tremendous anxiety about their child's achievement.
- They are obsessed with this concern. They want to know all the details about what is in the curriculum and what is expected of their child.

How to deal with this type:

- Do **not** say, in effect, "Back off and leave that concern to me!" This approach only creates more anxiety for these parents.
- In your conversations, provide a structure and suggest to the parents specific areas in which they can work. This gives them some sense of being involved.

4. The Gossiping Parent

Gossiping

Characteristics:

- This type usually thrives in small communities.
- This parent's basic goal seems to be to find out from you as much as he/she can about the neighbor's children.
- The second goal may be to cue you in on the neighborhood "dirt."
- Danger! Your professional reputation is at stake. Even *just* listening can be interpreted as agreement.

How to deal with this type:

- Take control of the situation. Say "We are here to discuss *your* child [only]."

- Don't let your curiosity get the better of you (or your good judgment).

5. The Complaining Parent

Complaining

Characteristics:

- Usually begins the conversation with "Please help me! I can't do anything with [Jodie]!"
- Be alert when you hear this. Make no suggestions. No matter what suggestions you might give, the parent will reject them.
- The parent will come out on top in this situation, and you, the teacher, will end up extremely frustrated.

How to deal with this type:

- Don't take the bait. Put the question back in the parents' hands. Get them to talk about things *they* have tried.

6. The Hostile, Aggressive Parent

Hostile, Aggressive

Characteristics:

- They try immediately to put the teacher on the defensive, regardless of the topic of discussion.
- They try to place the blame for their child's behavior on the teacher: e.g., "I understand you have a discipline problem in this room."
- They show hostility in their feelings about school, their child's degree of success, how their child is "treated," etc.

How to deal with this type:

- Listen.
- Don't get caught in a counter-defensive position.
- Don't respond to their hostility.
- Don't move too quickly, or you'll never have dialogue.

7. The Overwhelmed Parent

Overwhelmed

Characteristics:

- The life situation is just overwhelming: divorce or separation; a family financial crisis; loss of a job; possibly a death in the family.
- The parents unload their problems onto the teacher.

How to deal with this type:

- Overlook the fact that the meeting/conversation is supposed to be focused on the child. Just be a sympathetic listener.
- At the moment, the student has lower priority than the other concerns the parent has.
- Acknowledge that the parent has other things on her/his mind. Suggest "Perhaps we can get together again soon."

Indifferent

8. The Indifferent Parent

Characteristics:

- This parent is somewhat similar to the overwhelmed parent, but does not seem to hold the welfare of the child as a matter of great importance.
- This parent thinks the child is doing as well as can be expected; sees no need for concern.
- Indifference shows up in the way the child looks and acts: dirty clothes, evidence of poor nutrition, poor grooming, attention-craving. The parent doesn't return school forms or fails to pay bills at school.

How to deal with this parent type:

- Check with siblings of the student to compare appearance and actions.
- Discreetly question the child about care given at home.
- Discuss your concerns with the school nurse and/or counselor.
- Make a home visit to better understand the child's home environment. Be diplomatic in sharing your concerns about the child with the parents.

Adapted from various issues of the NEA Journal.

Chapter 7
What Is Being a Teacher All About? - A Summary

What Is Involved for Me?

Teaching is behavior which can be described. Teaching is behavior which can be modified. Teaching can be defined as directing the learning process.

The above three sentences say much about what being a teacher is all about. Those who would set out to teach our children, youth, and adults must have some ideas about how to teach in such a way that their students will adopt the behaviors that are the goals of teaching. Above all, teachers need to behave as authentic and effective human adults.

See Appendix A for additional pedagogical skills and concepts.

If students, regardless of age level, are to acquire professional attitudes, skills and understandings, those who teach must exhibit those same competencies and qualities. "The teacher of students is much more than a conveyor of knowledge or a sterile technician. He/She should be a moral, caring, effective, and integrated human being. We should accept no less." (W.W. Wayson, Professor Emeritus, Faculty of Educational Development, The Ohio State University)

Yes, teaching is behavior which can be described and modified. In this handbook for the beginning teacher, we have attempted to describe the desirable behaviors expected of a teacher. We have identified, described, and explained basic pedagogical skills needed by effective teachers—by master teachers. We invite you to give intensive study to Figures 9 and 10 in this chapter—brief summaries of the major concepts/principles/skills presented in this handbook. Also, we would like to close this handbook with appendices that supplement the basic pedagogical skills presented in the main body of the handbook. These should help to instill more firmly in your mind **What Being a Teacher Is All About.**

See Appendix B for a summary of audiovisual aids and how to select and use them.

See Appendix C for the model for linking planning, teaching, learning and assessing processes.

Figure 9 Ten Concepts Important to the Teacher

1. **The Master Teacher knows that TO LEARN** means to be able to do something you've never done before, and to remember it well enough to do it again. In other words, there is a change in behavior in the cognitive, psychomotor, and/or affective domains of learning.

2. **The Master Teacher knows that TO TEACH** means to direct the learning process.

3. **The Master Teacher knows that TO PLAN A LESSON** means to think through in advance what you want to have happen in the classroom or laboratory.

4. **The Master Teacher knows A LESSON PLAN** is a written step-by-step account of what you want to have happen in the classroom or laboratory.

5. **The Master Teacher SELECTS A TEACHING METHOD** that uses as many of the principles of learning as possible:
   a) Learning depends upon motivation.
   b) Learning depends upon a capacity to learn.
   c) Learning depends upon past and current experiences.
   d) Learning depends upon active involvement of the learner.
   e) Learning is enhanced by problem solving.
   f) Learning effectiveness is dependent upon feedback.
   g) Learning is enhanced by an informal atmosphere.
   h) Learning is augmented by novelty, variety and challenge.
   i) Learning is enhanced when a person knows what new behavior is expected of him/her.

6. **The Master Teacher ALWAYS ANSWERS THE STUDENT'S QUESTION** (spoken or unspoken): "Why should I learn what you want to try to teach me today?"

7. **GOOD TEACHING** is the kind that brings about relatively permanent desirable changes in the student—changes in judgment, reasoning, thinking, creativeness, communication, attitudes, appreciation, understanding, and manipulative skills.

8. **The Master Teacher CONSIDERS MASLOW'S HIERARCHY OF NEEDS** when interacting with students.

9. **The Master Teacher UNDERSTANDS WHY PEOPLE DO WHAT THEY DO,** and builds on this understanding when planning and teaching, and when guiding students. People do what they do for two reasons: they want something they don't have, or they have something they don't want.

10. **The Master Teacher UNDERSTANDS THESE SAYINGS:**
    a. "BE A TEACHER, NOT A TELLER."
    b. "Plan your work and work your plan."
    c. "He/She who fails to plan is planning to fail."
    d. "Idle hands are the devil's workshop."
    e. "We teach students a subject, not a subject to students."

L.E. Hedges, AgEd Dept, OSU, 1988

Figure 10 The "4 X 8 Pack" of Effective Planning and Teaching Tools

I Four Functions of the (Vocational) Teacher:
1. Teaching
2. Administration and Management
3. Occupational Technician/Subject Area Expert
4. Student Counselor

II Four Curriculum Planning Decisions:
1. Whom to teach
2. What to teach (to *whom*)
3. When to teach (*what* to *whom*)
4. How long to teach (*what* to *whom*, *when*)

III Four Instructional Planning Decisions/Questions for Every Teacher During Planning:
1. Where are we now?
2. Where are we going?
3. What steps do we need to take to get there?
4. How do we know if we have arrived?

IV Four Steps in Lesson Planning (Allen 4-Step):
1. Preparation
2. Presentation
3. Application
4. Evaluation

V Four Steps in the Learning Process:
1. Selecting/Presenting stimuli
2. Receiving stimuli
3. Perceiving stimuli
4. Acting on perceptions (Learning occurs)

VI Four-Question Interest Approach to Student-Centered Lesson Planning and Teaching:
1. How important is _____ ?
2. What problems have we had or do we anticipate with _____ ?
3. What do we need to know or be able to do to prevent and/or correct these problems?
4. What specific information are we lacking for each of these "things" we said we need to know or be able to do?

VII Four Reasons for Performance Objectives:
1. Help identify those behaviors that students are already exhibiting prior to presenting a lesson designed to produce these behaviors.
2. Identify expected learner outcomes for a given lesson or unit of study.
3. Provide basis for selection and organization of materials and experiences for effective learning.
4. Give a systematic means of devising ways of evaluating student performance.

VIII Four Primary Ways That Competency-based and More Traditional Training Programs Differ:
1. **What** the students/trainees learn.
2. **How** they learn each task.
3. **When** they proceed from task to task.
4. **If** students/trainees learned each task (determining and reporting).

Main difference: **In traditional programs**, time is the constant and performance is the variable. **In CBE**, time is the variable and performance is the constant.

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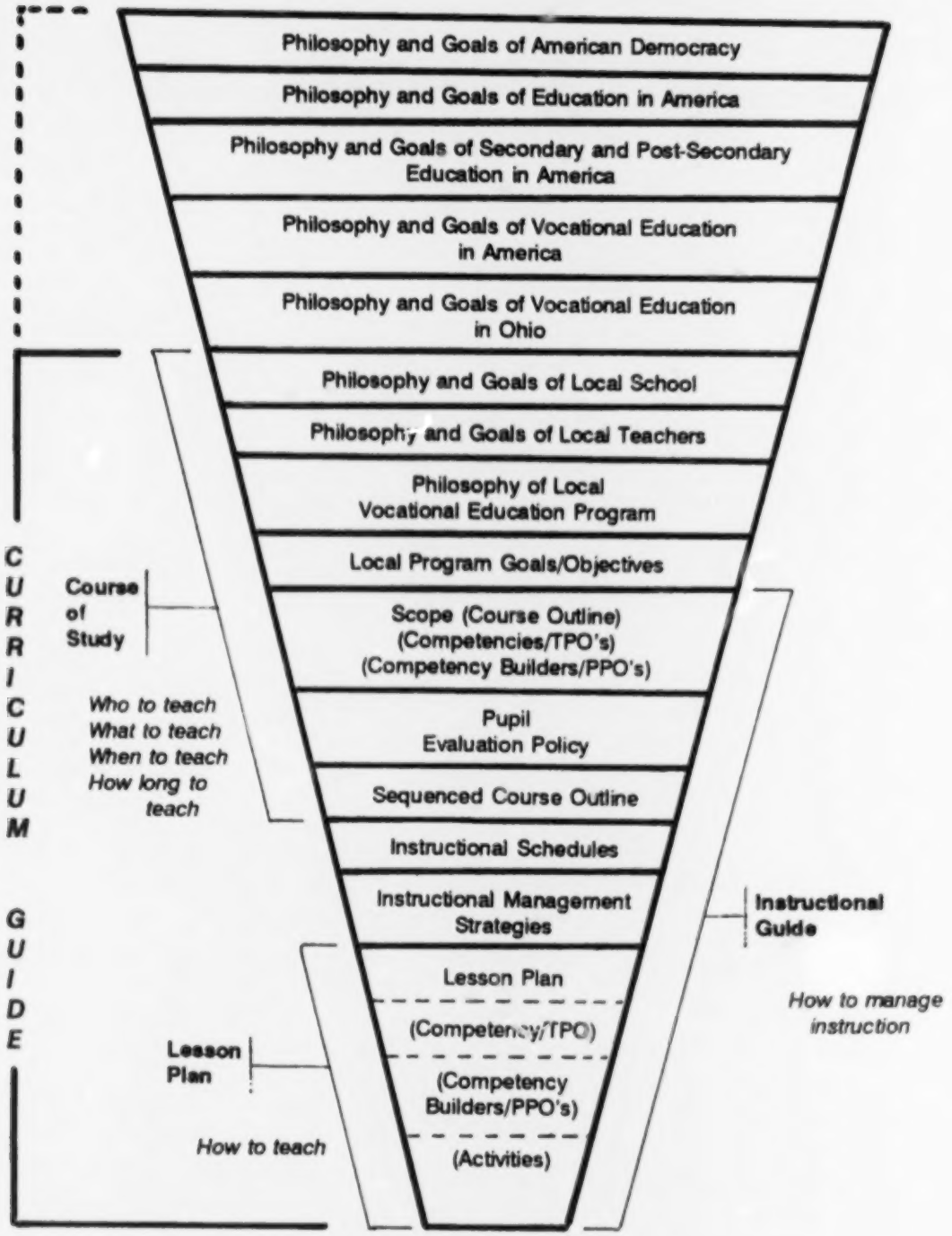
Appendix A

Additional Summaries of Pedagogical Skills and Concepts

- A Perspective of Vocational Education
- Steps in the Learning Process
- The Learning Process Expanded
- Basic Principles of Learning
- Primary Principles of Interest; Secondary Principles of Interest
- Three Essential Competencies Needed by a Master Teacher
- Getting and Keeping the Students' Attention
- Motivation Process
- Eleven Variables in Getting to Know Students as Individuals
- Four Major Curriculum Planning Decisions
- Problem-Solving Techniques Explained
- Instructional Schedule for Related Class and Laboratory
- Giving Criticism and Having It Accepted
- Narrative Recording Form
- Planning and Teaching Your Lessons Using the Problem-Solving Method

A Perspective of Vocational Education



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Steps in the Learning Process

1 – Selecting/Presenting Stimuli	**Learning Impeded**
Stimuli have both quantity and quality. Both can be manipulated.	Culture, family, school and teachers can restrict stimuli. Stimuli vary in quantity and quality. They can be manipulated. Whenever stimuli are impeded, learning is slowed, restricted or stopped.
2 - Receiving Stimuli	
Stimuli are received by the body's sensory receptors, which are pathways to the learners' minds.	Improperly functioning receptors (eyes, ears, nose, mouth, touch) do not receive stimuli.
3 - Perceiving Stimuli	
The learner gives meaning to the stimulus based on previous experience, present conditions, and present attitude.	Physical conditions, such as brain damage, prevent person giving correct meaning to stimulus. A threat to person and/or inadequate self-concept affect perception of a stimulus. All stimuli are interpreted as being either helpful or harmful to a person.
4 – Acting on Perceptions	
Learner acts on his/her perceptions and tests out his/her personal meanings of stimulus. Learner discovers whether he/she gave proper meaning to the stimulus/stimuli.	If a person is denied the opportunity to explore or act upon his/her perceptions, or if he/she is induced to react in some undesirable way, learning will also be affected.
❖ LEARNING OCCURS ❖	
Learner changes behavior as a result of acting on perceptions and testing out personal meanings through behavior. If intended change in behavior (a skill, attitude, or understanding) occurs, student has "learned."	

Note: In most instances, learning difficulties are complicated at several points throughout the process of learning. Impedance may occur at source of stimuli and at perception of stimuli. This makes teaching even more difficult for the teacher. But it also creates a worthwhile challenge—working with the minds of people.

The Learning Process Expanded

The Four Steps: Selecting/Presenting Stimuli → Receiving Stimuli → Perceiving Stimuli→ Acting on Perceptions → LEARNING OCCURS

1. Selecting/Presenting Stimuli
Stimuli have both quantity and quality. Both can be manipulated. It is more effective to manipulate quality, i.e., have the highest quality stimuli possible. The teacher basically controls quantity and quality of stimuli.

1. Learning is impeded (slowed, restricted, stopped) in this step by
culture, family, school and teachers. All can restrict or impede stimuli. Teachers cannot usually change culture, family, or school. But the teacher still needs to have (or use) appropriate references, instructional materials, community resources, and the students' minds, or the **teacher** is impeding learning.

2. Receiving Stimuli
Stimuli are received into the mind by the body's sensory receptors: sight, hearing, taste, touch and smell. It is the teacher's responsibility to ensure that students have enough light to see their books or the chalkboard, that they are not too hot or too cold, that they are not distracted by noise or odors.

2. Learning is impeded in this step by
improperly functioning receptors (eyes, ears, nose, mouth, touch), which do not receive stimuli. For example, the student may not be able to see the chalkboard clearly or hear the voice of the teacher. The student may be color-deficient—unable to identify the correct colors. The student may not receive stimuli because other needs, such as physical discomfort (illness, cold, heat, hunger) or psychological discomfort (fear, worry over family or personal problems, low self-esteem), are overpowering the need to learn.

3. Perceiving Stimuli
The learner gives meaning to the stimulus based on previous experience, present conditions, and attitude. **The meaning of a stimulus comes from the learner.** The teacher can only assist in helping the student see, hear, taste, touch, smell, and understand the stimulus properly.

3. Learning is impeded in this step by
physical conditions such as brain damage. Many times, a learner's physical condition prevents the person giving correct meaning to a given stimulus. Also, a perceived threat to a person or inadequate self-concept or self-esteem affects perception of a stimulus. A self-defeating attitude on the part of the learner impedes learning. All stimuli are interpreted as being either helpful or harmful to a person.

4. Acting on Perceptions
The learner must have an opportunity to act on his/her perceptions and test out his/her personal meaning of the stimulus. The learner discovers whether he/she gave proper meaning to the stimulus/stimuli.

4. Learning is impeded in this step by
the learner being denied the opportunity to explore or act upon his/her perceptions of the stimulus/stimuli. Or the student may be induced to react in some undesirable way. The teacher needs to provide time, materials, environment, and support to the learners.

(continued)

The Learning Process Expanded *(continued)*

LEARNING OCCURS

The learner "learns" – changes behavior (a skill, attitude, or understanding) as a result of acting on perceptions and testing out personal meanings through behavior.

If the learner fails to "learn" the performance or behavior listed in the student objective, the teacher must again take the learner(s) through the steps in the learning process. Each time through the steps, the teacher will need to manipulate stimuli, i.e., use higher quality stimuli or those more familiar to the learners. The teacher also needs to examine the learning environment in each step of the learning process to check for impedance factors.

Important point:

In most instances, learning difficulties are complicated at several points through the process of learning. For example, impedance may occur at the source of stimuli or at the perception of stimuli. This makes teaching even more difficult for the teacher. But it also creates a worthwhile challenge—working with the minds of people.

Lowell E. Hedges/OSU/AgEd Dept/83/795.01/Beginning Teachers Program.

Adapted from: Frymier, Jack. *The Nature of Educational Method.* The Ohio State University. Columbus, OH: Charles E. Merrill Books, Inc. 1965.

Basic Principles of Learning

1. Learning depends on motivation.

No one learns without feeling some urge to learn. This urge to learn must come, ultimately, from within the learner. This urge or desire may be fear, need, inborn drive, curiosity, goal, mystery, challenge, importance, personal attachment, or some other motivating force. Much learning occurs when a person attempts to satisfy these urges or desires. Therefore, to help the student become motivated to learn, the teacher should provide learning activities that take advantage of these urges or desires. When students derive satisfaction from a learning activity, they are more likely to be interested in pursuing additional learning.

Success is a strong motivating force. We learn when we are rewarded (or successes are reinforced), and fail to learn when we are "punished."

Interest is a source of power in motivating learning. Motivation (interest) is strongest when students perceive that learning can be useful. A person learns most quickly and lastingly what has meaning for him/her.

When an organism is ready to act, it is painful for it not to act; and when an organism is not ready to act, it is painful for it to act. This means that some time must be spent in preparing learners to learn.

2. Learning depends on a capacity to learn.

Individuals differ in all sorts of ways. They vary in their minds, personalities, appearances, and prior experiences. These differences create other differences—intelligence, physical maturity, social skills, motor skills, attitudes, motives, drives, tastes, fears and hopes. The result is that each person has a unique reaction to any given learning task (or stimulus). Reactions to the same stimulus will therefore differ. When a teacher gets a group of students to do something, some of the group will do it better than others. There will be a wide range in the degree or speed of learning and in the amount of retention.

Physical defects lower efficiency in learning. A person who is physically healthy, with no impairment of body movements, possesses the greatest efficiency in learning.

The absence of emotional tension also increases efficiency in learning. The teacher can reduce tension in the student by being friendly, believing in the ability of the student to succeed, accepting the student for the person he/she is, and providing a secure environment for the student.

3. Learning depends on past and current experience.

The foundation of all learning is based directly on the accumulated experience of the learner. New subject matter is always interpreted by the learner in the light of his/her previous knowledge and past experiences.

The mind works best from the known to the unknown, from experience to interpretation, from that which it perceives to that which it conceives.

Basic Principles of Learning - *page 2*

4. Learning depends on active involvement of the learner.

A person learns by his/her own activity. People remember what they do and see longer than what they hear. First-hand experience makes for lasting and more complete learning. Within certain limits, the more extensive a learner's activity, the greater will be the learning. That activity should be realistic—either on the job or off it.

Learning is reinforced when two or more senses are used at the same time. Students learn better if they see with the eye, touch with the hands, hear with the ears, heft with the muscles. At the same time they are seeing with the mind's eye.

5. Learning is enhanced by problem solving.

"Problem-oriented" approaches to teaching improve learning. The important thing is that the student in his/her learning, and in the teaching that accompanies it, should inquire into the subject matter rather than be instructed in it. This approach makes the teaching **student**-centered rather than **subject**-centered.

We are continually confronted every day of our lives by problems of varying difficulty and importance in all areas of our lives. Problem solving and decision making begin as soon as we awake in the morning and continue till we fall asleep at night. We are not born with the ability to solve problems or make decisions. That ability must be taught us just as math and communications skills are taught us.

In problem solving, the learner is helped to define and limit the problem, to find necessary information, and to interpret and analyze the problem. The learner is permitted divergent thinking.

6. Learning effectiveness is dependent on feedback.

Feedback is the information by which the learner determines what is going on and how well she/he is doing. The basic intention of feedback is to motivate learning. Students who have knowledge of their learning progress show superior performance to those who do not have such knowledge. Behaviors that are reinforced or rewarded (as a result of feedback) are more likely to be learned. Learning is more effective when this feedback is given immediately following the learner's response to a learning activity. This feedback must be clearly connected with the response (behavior) of the learner. Delayed approval or disapproval is not highly motivating. Praise is better than scolding. As teachers, we should be generous with pats on the back and slow to give slaps on the wrist.

7. Learning is enhanced by an informal atmosphere.

Efficiency in learning decreases when the learner is under emotional tension. Too structured a learning environment produces tension in some learners. Therefore, use of a less formal or structured learning situation is more likely to reduce tension in learners.

One of the key objectives of an instructor is to ensure feelings of comfort and acceptance in a group of learners. The instructor must act to make the learning situation be perceived as "open" – where learners may speak out, fumble for answers, argue freely, and so on, without embarrassment or scolding. Informality and democratic treatment are not ends in themselves; they are conditions that permit productive learning to occur more readily.

(continued)

8. Learning is augmented by novelty, variety, and challenge.

Engagement and maintaining the interest of students is fundamental to any effective educational activity. To hold the interest of participants in the learning situation, novelty, variety and challenge must be deliberately used by teachers.

a. A fresh, stimulating experience is rewarding in itself. Children appear to seek novel experiences and often find satisfaction in undergoing an unusual experience, with no other reward offered or given.
b. Variety in learning experiences promotes efficiency in learning. Constant monotonous attention to any one thing produces tension, and emotional tension decreases efficiency in learning.
c. Students are motivated when they attempt tasks that fall in a range of challenge, such that success is considered possible but not certain.

9. Learning is enhanced when a person knows what new behavior is expected of him/her.

If you want a certain result, teach it directly. Your students are not born with the skills you want them to have. Nor can we depend on other teachers to teach students to our satisfaction. If your students do not know what you want them to know, the most efficient thing to do is teach it to them.

Lesson plans need to be based on student performance objectives—the kind of objectives that specify what the student is expected to be able to do at the end of the lesson. By sharing these objectives with the student, the teacher informs the student as to the new behavior expected of the student. Learning is more rapid and longer lasting as a result.

Demonstrations given in a lesson show implementation of this learning principle. By showing the students exactly what to do, how to do it, and what the end product should look like, the teacher saves the students time by removing the need for extensive trial and error on their part.

During the early part of the lesson, the teacher should share with the students the information, "At the end of this lesson, this is what you will be able to do."

Source of titles of principles: Nebraska. Content: L.E. Hedges, AgEd 621, OSU, SWC Sch, 9-92

Primary Principles of Interest

1. All interest apparently has its source in so-called natural impulses, urges, or drives. The most useful are:
   a. Activity
   b. Love of nature
   c. Curiosity
   d. Creativeness
   e. Gregariousness
   f. Desire for approval
   g. Altruism
   h. Self-advancement
   i. Competition
   j. Ownership

2. What interests us is that which affects us, those about us, or humanity at large.

3. Interest increases with an increase in related knowledge of the subject, provided such knowledge is well understood.

4. Interest increases with the acquisition of a given ability or skill.

5. Interest flows, or spreads, from an interesting thing into an uninteresting thing whenever the two are clearly connected in thought.

Secondary Principles of Interest

1. Thinking is essentially interesting; memorization, uninteresting.

2. Interest is contagious in the sense that one person may "get it" from another.

3. Interest is strengthened by a sense of progress.

4. Interest is created and sustained by a state of suspense.

5. An ideal, when fully accepted, becomes a new interest center from which interest will spread to any other thing that is seen to be connected with it.

6. The novel and unexpected are interesting.

7. Humor creates interest.

L.E.Hedges, AgEd Dept, OSU, 1994

Three Essential Competencies Needed by a Master Teacher

(Figure 8, page 31 in greater depth)

1. Being "With It"

* Recognizes verbal and nonverbal behaviors that could lead to class problems, such as inattention, boredom, etc.
* Can keep class going while attending to students' behavior and responses.
* Senses what is going on with the class and individuals.
* Uses appropriate interventions and adjustments after receiving feedback from students.
* Is "smart"; knows about teaching, learning, the subject taught, people in general, and students specifically; uses this knowledge to keep the class moving.
* Can empathize with feelings; cares for students and is able to show that caring through actions and words.
* Supports students with positive comments, thus drawing them further into the learning process.
* Uses humor; speaks with enthusiasm.
* Can restate questions and comments accurately because he/she is in touch with students individually and as a group.
* Is up-to-date technically in subject area.
* Uses purposeful movements; is able to switch body speed and motion to fit action of class (e.g., sit, stand, or walk).
* Knows what is going on in the community. Draws examples from local community or current interests of age group being taught.
* Seriously studies the history and background of school, community, department, students.
* Interacts with faculty and community; emulates best skills of colleagues.

2. Having an In-Charge Image

* Gives interesting presentation; holds student interest.
* Leads discussion skillfully as a facilitator. Moves at a challenging pace.
* Is business-like in behavior.
* Concentrates on what is going on. Anticipates student actions and reactions.
* Is aware of student needs; checks own senses before reacting.
* Carries self physically erect; has purposeful movements; body open (arms, eyes); has eye contact.
* Responds to questions and comments with body as well as voice; acknowledges with body as well as with voice.
* Uses voice loudly enough to be heard well, but not unpleasantly.
* Uses clear instructions and wording. Makes objectives clear.
* Can pause without discomfort.
* Knows and uses the students' names.
* Recognizes and uses humor when appropriate.
* Remembers and refers to previous actions and comments throughout the class.
* Thinks and communicates logically.
* Has lessons well prepared. Has a detailed lesson plan or other evidence of thorough planning.
* Has needed materials ready.
* Senses what is going on with the class and individuals.

2. Having an In-Charge Image *(continued)*

* Is friendly, but has clear boundaries.
* Has appropriate degree of control and organization in the classroom and lab.
* Has high expectations of student performance.
* Is serious about job of teaching. Sees self as liked, worthy, and able to do a good job.
* Encourages group ownership of goals and achievements.
* Involves students and uses their expertise.
* Takes mistakes and criticism in stride.

3. Being Student-Centered

* Emphasizes beliefs and values related to caring for the individual human being.
* Attempts to learn more about each student so as to be of the most help.
* Shares personally with students; establishes a two-way relationship.
* Is keenly aware of student needs.
* Structures unit and daily lesson plans around solving students' present and future needs.
* Creates group ownership of objectives of the class, lesson, program.
* Has ability to listen.
* Creates loving, caring, learning atmosphere.
* Gives instruction that makes sense to students. Uses relevant examples.
* Involves all students.
* Stimulates thinking and reasoning. Helps students go beyond specific recall of facts into an understanding and application of problem solving.
* Takes time to really know the individual student. Attends school functions; interacts with students.
* Is willing to give up and hand over some direction and control of the learning process to individual students.
* Tolerates errors on the part of students.
* Finds good things in students and calls attention to them.
* Encourages application of knowledge.

Hedges, Lowell E. *Anticipation and Preparation: A Teacher's Survival Guidebook.* 1997.

HELPING THE STUDENT TO WANT TO LEARN:
SOME CAUSE-AND-EFFECT RELATIONSHIPS

Getting and Keeping the Students' Attention

A. Schools exist to help people learn.
Learning occurs via the learning process.
The teacher directs the learning process.
There are four steps in the learning process.
Learning can be impeded at any of the four steps.
At any step, no learning can take place without attention.

B. The teacher is primarily responsible for selection and presentation of stimuli in the learning process. Selection and presentation significantly determine degree of attention given by student.
If a student doesn't give attention to learning activities, stimuli cannot be received.
If stimuli are not received, they cannot be perceived.
If stimuli are not perceived, there are no correct perceptions to be acted upon.
If perceptions cannot be acted upon, learning cannot occur; no relatively permanent desirable changes in behavior take place.

Students do not give attention because the drive or motivation to direct attention is diverted to satisfying other needs (deficiency needs [Maslow]) rather than the need to learn (satisfying growth needs). Students come to class with motives, but these motives may not pertain to learning what the teacher wants to teach.

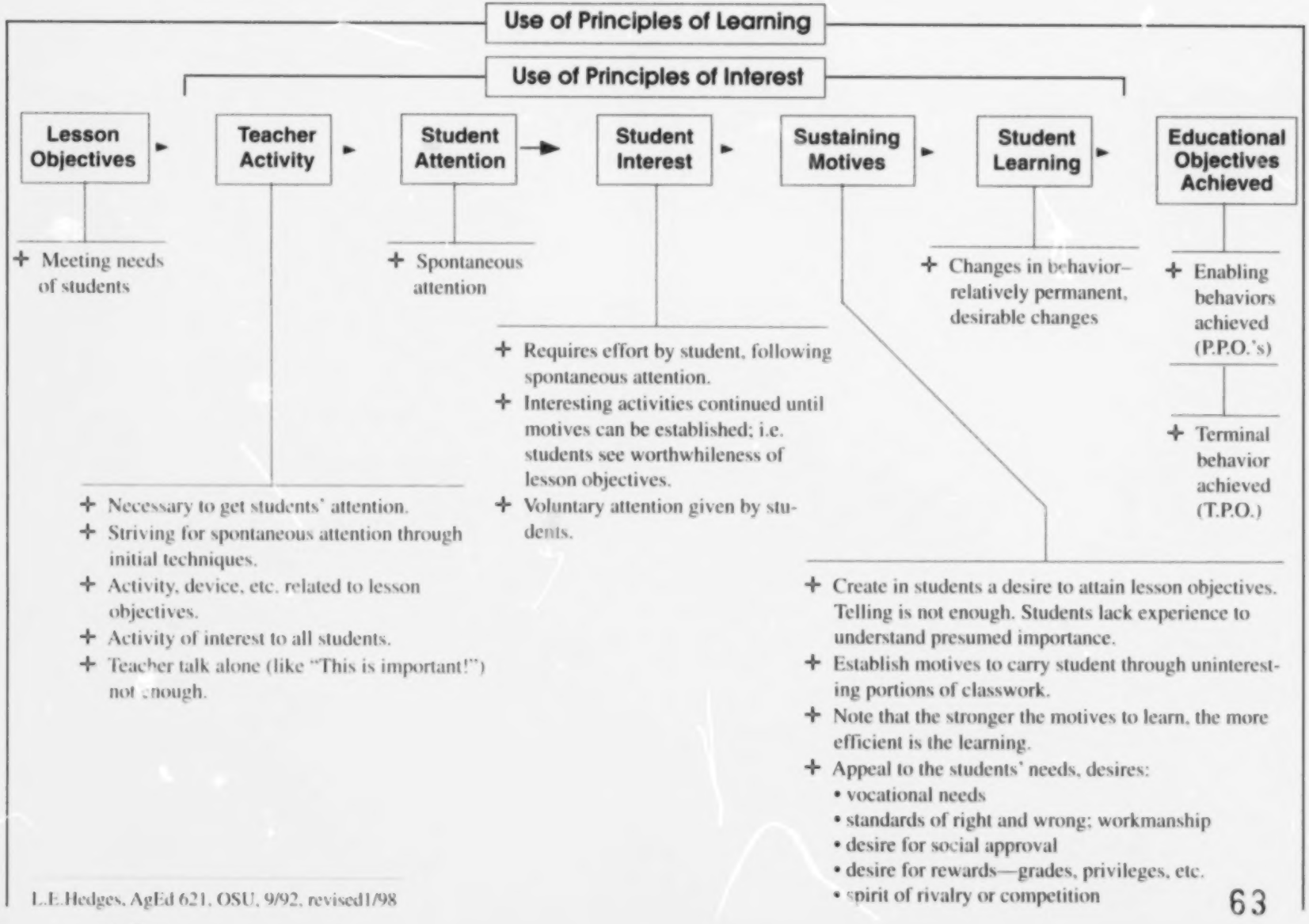
C. The task of the teacher is to gain the student's attention and to keep it long enough for the student to develop sustaining motives to learn.
The teacher can overpower (or replace) the pull of deficiency needs by using interest principles/learning principles.
These principles (interest and learning) can be used by the "Lesson Planning/ Teaching Process."
This process can be effectively implemented by using the techniques for promoting **critical thinking** on the part of the student, i.e., the "problem-solving approach" as a lesson planning/teaching process or method.

(While you the teacher are engaged in the necessary processes, you must manage other conditions of the classroom. Many "separate worlds" exist simultaneously: Bill is accusing Tom of stealing his pencil; Mary is done with her work far more quickly than her classmates; Mike is daydreaming and can't seem to get going; Judi decides to take her frustrations out on you. Handling this mixed bag of activity is referred to as **classroom management**.)

D. Effective classroom and lab management can be accomplished when you develop and use the three essential teaching competencies: Being "With It," Having an In-Charge Image, and Being Student-Centered in your philosophy and actions.

L.E.Hedges, AgEd Dept, OSU, 1991

Motivation Process


Use of Principles of Learning
Use of Principles of Interest
Lesson Objectives
Teacher Activity
Student Attention
Student Interest
Sustaining Motives
Student Learning
Educational Objectives Achieved
+ Meeting needs of students
+ Spontaneous attention
+ Changes in behavior–relatively permanent, desirable changes
+ Enabling behaviors achieved (P.P.O.'s)
+ Terminal behavior achieved (T.P.O.)
+ Requires effort by student, following spontaneous attention.
+ Interesting activities continued until motives can be established; i.e. students see worthwhileness of lesson objectives.
+ Voluntary attention given by students.
+ Necessary to get students' attention.
+ Striving for spontaneous attention through initial techniques.
+ Activity, device, etc. related to lesson objectives.
+ Activity of interest to all students.
+ Teacher talk alone (like "This is important!") not enough.
+ Create in students a desire to attain lesson objectives. Telling is not enough. Students lack experience to understand presumed importance.
+ Establish motives to carry student through uninteresting portions of classwork.
+ Note that the stronger the motives to learn, the more efficient is the learning.
+ Appeal to the students' needs, desires:
• vocational needs
• standards of right and wrong; workmanship
• desire for social approval
• desire for rewards—grades, privileges, etc.
• spirit of rivalry or competition

L.E.Hedges, AgEd 621, OSU, 9/92, revised1/98

Eleven Variables in Getting to Know Students as Individuals

The student's

1. ability to recall facts and/or relationships
2. physical, emotional, and social maturity
3. desire to learn
4. ability to concentrate on the task at hand
5. ability to work alone and/or in a group
6. muscle coordination
7. reading and listening abilities
8. ability to express him/herself orally and/or in writing
9. need for reinforcement
10. reliance on physical or concrete material and/or his/her ability to abstract and generalize
11. learning pace or the rate at which he/she can progress

All these get-acquainted factors could be combined to define operationally the learner's entering behavior; that is, how much the student already knows or can do before you try to teach him/her. Identifying the learner's **entry behavior** is probably one of the most important yet most frequently ignored tasks of the teacher.

It would be foolish to plan for an instructional goal without considering where to begin and when to conclude your instruction. You can choose the latter (**terminal performance**) but not the former (**entry behavior.**) **If you fail to identify each learner's entry behavior, you will tend to treat all learners alike**. Certainly, your students are alike in some ways, but they also differ somewhat in their entering behaviors.

Weigand, James E., editor. *Developing Teacher Competencies*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1971, pp. 134-135.

Understanding human beings is a teacher's greatest asset

Four Major Curriculum Planning Decisions

There are four major planning decisions that serve as a basis of our curriculum development procedure. When these four decisions are made, the resulting information will help establish the procedures for developing the **curriculum guide**, and also the content of the **course of study** and the **instructional guide**—the two components of the curriculum guide. The four decisions are:

1. Whom to teach

For most instructors, this decision is made by the administration or the enrollment process. Usually we do not select the students who enroll in our program. However, knowledge of our students is needed in order to make other decisions, such as what to teach, what instructional strategies to use, time allotted to teach a lesson, etc.

2. What to teach (to *whom*)

Factors affecting this decision: needs of students (OCAPs), needs of employers (OCAPs), resources of the school and community, time available to teach, teacher competencies, and a few others. We can categorize these factors as students, community, school and teacher.

3. When to teach (the *what* to *whom*)

Factors affecting this decision: early needs of students, seasonal needs of students and the job, frequency of using skill, job sequence, difficulty of skill, student motivation or maturity, job placement needs of students, special activities, facilities available, time available for the class, and several other factors.

4. How long to teach (the *what* to *whom*, *when* [at a specific date/time])

Factors affecting this decision: level of proficiency desired in the students, previous instruction, total number of competencies that must be taught during length of program, effective use of facilities, special activities, and others.

Next Big Decision: How to Teach

Once the curriculum guide is developed, another major decision or question needs to be addressed: **How to teach** (the *what* to *whom*, *when*, and *for how long*).

Skills needed by teachers to teach the curriculum effectively can be taught in an inservice education program (or a **pre**-service program).

Problem-Solving Techniques Explained

1. Name of technique: **Key Steps**

   Explanation: There are specific steps or operations required, usually in sequence, for development, construction, maintenance, adjustment and/or repair.

   Example of problem statement: "What procedures should J____ follow in hooking up a new printer for the computer?"

2. Name of technique: **Forked-Road**

   Explanation: There are two choices for problem solution or decision making. The factors involved must be considered: the advantages and disadvantages of each option.

   Example of problem statement: "Should J____ keep [his/her] computer or buy a newer model?"

3. Name of technique: **Possibilities-Factors**

   Explanation: There are more than two options or choices for problem solution/decision. Several characteristics/factors must be considered when selecting the appropriate option.

   Example of problem statement: "Which brand of computer should J____ purchase?"

4. Name of technique: **Situation-to-be-Improved**

   Explanation: There are certain characteristics and requirements for the situation. Have available specific information about student's situation. Need to learn the *what* and *why* of the requirements. Class needs to make recommendations for improving the situation (if needed).

   Example of problem statement: "What changes, if any, should J____ make in [his/her] present computer?"

5. Name of technique: **Given the Effect, Find the Cause (Effect/Cause)**

   Explanation: Symptoms of the cause or causes are available. Select possible cause or causes, then determine the appropriate options for action. Action could be implemented via the "Key Steps" technique lesson plan.

   Example of problem statement: "J____'s computer fails to print the document. What could be the cause?"

Hedges, Lowell E. *Teaching for Connection: Critical Thinking Skills, Problem Solving, and Academic and Occupational Competencies.* 1996.

INSTRUCTIONAL SCHEDULE FOR RELATED CLASS AND LABORATORY

PROGRAM:

UNIT:

SUBUNIT:

Competency/Terminal Performance Objective:

Learning Center	**Number/ Name**	**Date**

Strategies for Related Class and/or Laboratory (Activities, Rotation):

1. Discussion groups	7. Resource person(s)
2. Lecture	8. A/V presentation(s)
3. Demonstration	9. Computer-aided instruction
4. Supervised study	10. Role playing
5. Individual research	11. Case problem(s)
6. Field trip(s)	12. Other

Competency Builders/Pupil Performance Objectives:

Integrating Academic Competencies:

Communications

Math

Science

Safety

Equipment, Supplies, and Other Resources:

Evaluation/Performance Assessment:

1. Written quiz	6. Completed project
2. Oral quiz	7. Peer evaluation
3. Instructor observation	8. Lab peer supervision evaluation
4. Practice test	9. Written report(s)
5. Written unit test	10. Other

Source: Hedges, Lowell E. *Teaching for Connection: Critical Thinking Skills, Problem Solving, and Academic and Occupational Competencies.* 1996.

Giving Criticism and Having It Accepted

As a beginning teacher, you will be evaluated by various educators: supervisors, other local school administrators, university teacher educators, and perhaps a mentor. Also, you will be evaluated as a teacher by **your** students. On the other hand, **you** will be evaluating the learning progress of your own students as you lead them through the steps in the learning process. Whether you are receiving or giving evaluation results, the process should be effective and efficient, and ultimately, it should result in positive changes for yourself as well as your students.

Regardless of whether you are the receiver or the giver of criticism (positive plus for purposes of change), following are some concepts and principles to consider. Give them careful thought and use.

The giver of criticism never has complete control over the situation. Once criticism is delivered, the receiver is in control. How the receiver responds to the criticism determines its success or failure.

The giver should offer criticism that is accepted, understood, and acted upon. As long as the receiver has a choice whether to accept the criticism or not, the receiver is in control.

Key Principle: **Eliminate** the receiver's opportunities to reject the criticism. To accomplish this, the criticism must be prepared ahead of time.

To Prepare:
Ask: Do I know exactly what kind of behavior I want from the person?
Ask: Can I supply specific information upon which the person can act?

Consider: **Vague implications will not elicit a desired change**. In order to change, a person needs to know exactly what to change and how to do it. Be specific. Point: Evaluation formats that use criteria such as EX, VG, G, Ave, F, and P are ineffective in providing specifics.

Use specific examples when criticizing. Criticism without examples of the behavior that needs to be remedied is not constructive. What's more, the giver runs the risk of being put on the defensive and having the criticism rejected.

L.E. Hedges, AgEd, OSU, OTISAConf, 3/94

Narrative Recording Form

School _____ Grade _____ Date _____

Teacher _____ Evaluator _____

Class _____ Topic _____

Student Performance Objective(s) _____

Things That Helped Achieve Objectives	Questions/Things to Consider
(In this column record the things that the teacher does, or causes to happen, that enable the students to progress successfully through the steps in the learning process and to eventually "learn" the competency being taught. This competency is stated in the student performance objective.)	(In this column record the things that the teacher **needs** to do, or **not** to do, to overcome any impedances to learning that occur in the steps of the learning process. Also, record any questions you may have about the lesson; e.g., what happened in class yesterday that may be having an impact on today's lesson, why the teacher did certain things in today's lesson, or why a certain student is acting the way she/he is.)

Planning and Teaching Your Lessons Using the Problem-Solving Method

The sample lesson plan on the use of the microscope (pages 12–15) is comprised of four steps: I - Preparing to Teach; II – Presenting the Lesson; III – Helping Students Apply Concepts/ Principles/Skills; and IV – Evaluating Student Learning.

I Preparing to Teach

Competency/Student Performance Objective

The foundation of each lesson is the student performance objective. The basis of each student performance objective is a competency or competency builder.

Integrating Academic Competencies

Your students need to understand and use certain basic math, science, communication, and safety principles and concepts related to the employability competency they will be learning. These academic competencies are identified and listed in the lesson plan. These competencies originated in the Ohio Department of Education OCAPs (Ohio Competency Analysis Profiles) for math, science, and communication, developed for vocational education programs. During the teaching of the employability competency, you will need to integrate the appropriate academic competencies.

Equipment, Supplies, and Other Resources

The necessary equipment, supplies, and other resources needed to teach the lesson are included in the plan.

Present Situation

This portion of the lesson plan lists the background of the students as related to the competency or competency builder being taught. This information is important to a teacher in that it provides a starting point in the lesson. What do the students already know about the competency? What degree of experience do they have concerning the competency? In other words, what is their "entry behavior"? An effective teacher starts the lesson where the students are in terms of present knowledge and experience.

Interest Approach

The interest approach in the problem-solving teaching method is based on student response to the first three of the four questions. Through their participation in responding to these questions, students develop an understanding of the importance of the lesson to them. Experiences concerning the topic are shared, problems identified, and skills/attitudes/understandings are identified that are needed to prevent these problems from happening again, or to correct them now.

Question 1: How important is _____ ?

This question helps students understand what their lives would be like without the object of the lesson. A paraphrased example of this question is: "What would we **not** be able to do if we didn't have cars?" "What could we **not** do if we couldn't operate a computer?"

Question 2: What problems have we had or do we anticipate having with _____ ?

Getting students to share the problems they have had (or the problems others have had or the problems they anticipate) with the item being discussed makes the lesson a personal experience of each student. They gain "ownership" of the lesson.

Question 3: What do we need to know or be able to do to solve and/or prevent these problems?

Student responses to this question help provide the lesson content outline. These "things we need to know" usually correlate closely with the content you have already developed for the lesson. (No teacher should begin a lesson without having previously planned it with considerable detail.) Students usually think of approximately 75 percent of the content you have already determined should be in the lesson. **Their responses, these "things," are what you teach as you develop question 4.**

CAUTION: In the discussion of Question 3, NEVER say to the students, "Now, there are two [or one or three] more things you need to know or be able to do." This statement destroys what you have tried to do: develop student ownership in the lesson. Students will respond, "If you already knew all the things we should know, why did you **ask us**? Just **tell us** what we need to know! The lesson will go faster."

You will need to expand, divide and/or condense the various "things to know" when actual teaching begins after question 4 is presented. Obviously, in this process you will need to include content that the students didn't think of during the discussion of question 3.

The first three questions help answer the one main question students have at the beginning of a lesson (or of each class): "Why should I learn what you're trying to teach me today?" The three questions form the interest approach for the lesson.

II Presenting the Lesson

Question 4: What specific information are we lacking concerning what we said we need to know and/or be able to do?

Students do not answer this question as they do the previous three questions. This question is rhetorical—a "lead-in" question to begin the teaching of the "things we said we need to know or be able to do." This question provides continuity of thought in the problem-solving mind-set. It is your responsibility as the teacher to select, or put in sequence, the lesson content items you are about to teach. You then teach the skills, attitudes and understandings relevant to each item. Remember that you will find it necessary to expand some of the student responses given to question 3 above, and combine or condense others. This is your professional responsibility.

III Helping Students Apply Concepts/Principles/Skills

The application phase of the Four-Question Approach takes place throughout the teaching of the "things we said we need to know or be able to do." Depending on the type of skills, attitudes, and understandings being taught in the lesson content, students will be practicing manipulative skills as well as problem solving and/or reasoning. For example, the skill being taught could be sharpening tools. Students could practice on junk tools before applying their newly learned skill on "good" tools.

Application also takes place when a student applies the problem-solving technique to his/her own situation at home or on the job.

IV Evaluating Student Learning

Evaluation of student learning can take place as the class progresses through the learning of the planned skills, attitudes and understandings. Evaluation can be **formative** (testing the amount of learning periodically throughout the lesson) and **summative** (testing the amount of learning at the end of the lesson).

Evaluation can be of several types: written tests, oral tests, and/or practical tests. Use the type most appropriate for the lesson's student performance objectives. In this book, the sample lesson on using a microscope includes a **performance checklist** (page 15) as one of the summative evaluation techniques.

Note: Lesson plans using this method, formatted on a computerized template, were developed by Curriculum Materials Service. The template is available in both WordPerfect format and Microsoft format.

Appendix B

Selecting and Using Audiovisuals and Other Instructional Materials

- Selecting and Using Audiovisuals and Other Instructional Materials
- Using the Chalkboard
- Overhead Projector and Transparencies
- Displays (Bulletin Boards, Window Exhibits, Showcases)
- Flip Charts
- Videotapes (VCRs and Camcorders)
- Using Slides: Say It Simply
- Design Principles: Making Your Audiovisuals More Effective
- Using the Chalkboard Checklist
- Using the Overhead Projector and Transparencies Checklist
- Using Displays Checklist
- Using Bulletin Boards Checklist
- Using the Camcorder Checklist
- Using Slides Checklist

Selecting and Using Audiovisuals and Other Instructional Materials

Using the Chalkboard

1. Usage

a. Illustrate facts, ideas, and processes.
b. Eliminate lengthy dictation and possible erroneous interpretation of information.

2. Tips and Techniques

a. Write big enough so everyone can see. Letters should be 2 1/2 to 3 inches tall.
b. Printing is usually better than writing.
c. Keep chalkboard clean. Erase vertically rather than horizontally. Horizontal erasing leaves curved marks that lead the writer to write in a curved manner.
d. If glare is present, adjust window shades.
e. Do not stand in front of material on board.
f. Talk to the class, not to the board.
g. Prepare time-consuming materials in advance. Do not go to extremes in drawings. Use template for exact illustrations.
h. Keep material organized. Use topic headings; label material. Use outline format.
i. Hold chalk at an angle with thumb and two fingers.

Overhead Projector and Transparencies

1. Usage

a. Can maintain eye contact with audience at all times.
b. Can control rate of presenting information by covering transparency with a paper.
c. Can superimpose additional transparent sheets as overlays on a base transparency.
d. Can duplicate inexpensively on paper the material to be presented as transparencies.
e. Can simultaneously project other visual materials.

2. Tips and Techniques

a. Prepare transparencies in vertical format.
b. Avoid mixing vertical and horizontal transparencies in a presentation—annoying to the audience.
c. Limit content of transparency to a single concept or a limited topic.
d. Minimum size of letters: 1/4 inch tall.
e. Use disclosure method to present information. (Uncover words/lines as needed.)
f. Turn lamp off when not projecting information.
g. Use color to give emphasis, to improve appearance of subject.

Displays (Bulletin Boards, Window Exhibits, Showcases)

1. **Usage**
   a. Give instruction in your absence.
   b. Create interest in forthcoming events.
   c. Can serve as a pretest or test of student's attitudes or understandings.
   d. Eliminates duplicating materials of which there is only one copy.

2. **Tips and Techniques**
   a. Keep display simple.
   b. Consider underlying goals of display:
      - Arouse interest.
      - Stimulate thought.
      - Get action.
   c. Present a single important idea that is timely and personal.
   d. Have a focal point of interest. Use actual object if possible.
   e. Place heart of display at approximately eye level. Place it off center to show action.
   f. Lead viewer's eye from top to bottom; left to right.
   g. Use horizontal lines.
   h. Use lower case letters of appropriate size. Two-inch letters can be read easily from 25 feet.
   i. Use neutral background; 2-3 colors for accent.
   j. Most legible combination of colors: black on yellow. Least legible: red on green.

Flip Charts

1. **Usage**
   a. Convenient, inexpensive to use, and suitable for many uses.
   b. Portable and compact.
   c. Used for many of the same purposes as chalkboards. Especially good for drawings, notes and charts.
   d. Sheets can be prepared in advance and revealed one at a time during a presentation.
   e. Material can be saved for future use.
   f. Not as suitable as chalkboard for large groups.

2. **Tips and Techniques**
   a. Prepare detailed material prior to presentation.
   b. Use lower case letters.
   c. Make letters at least 1 1/2 inches tall and titles 3 to 4 inches tall.
   d. Use felt-tipped pens, crayons, or colored chalk.
   e. Use tabletop easels or floor easels.
   f. Use rigid backing for chart paper.
   g. Use color to accent main points.
   h. Use self-stick chart paper that attaches to walls. Be alert to ink bleed-through.

Videotapes (VCRs and Camcorders)

1. Usage

a. Use in place of a field trip. Less costly and time-consuming. Advantage of close-up photography. Commentary may be recorded immediately or later.
b. Can replace prepared lab procedures.
c. Can be used as preview and review of original demonstration.
d. Good for students with reading problems.
e. Can replay to students who have been absent.
f. Operation of VCR is simple—requires little technical skill or practice prior to operation.

2. Tips and Techniques

a. "Warm-up" students and guest lecturers to videotape and being on television before taping.
b. Use more than one microphone if sound is a problem.
c. Plan lessons more carefully for videotaping.
d. Keep television teacher in the viewing area.
e. Give more complete verbal explanation when videotaping a physical demonstration.
f. Use both long-range and zoom lenses.
g. Use the four "moving-camera" techniques:
   - Panning: a horizontal movement of the camera.
   - Tilting: a vertical movement of the camera.
   - Dollying: a movement of the camera away from or toward the subject. (Dollying the camera parallel to the subject is called trucking.)
   - Zooming: a continuous change in focal length of the camera lens during a scene that simulates the effect of camera movement toward or away from the subject.
h. Use long shots as "establishing" shots. Helps viewer see the relationship between the whole and the parts. Use medium shots to concentrate on the main elements of the scene. Use close-up shots to permit one element to dominate the scene; emphasizes detail.
i. Do not place microphone on table on which demonstration is given. Microphone will pick up too much noise.

Using Slides: Say It Simply

1. Usage

a. Slides are separate units; they can be rearranged, added, deleted, or replaced by updated pictures.
b. Used to stimulate interest; hold attention.
c. Greater number of people can see materials.
d. Used to introduce new topics; develop background mind-set for presentation; review topics.
e. Good as aids in more permanent learning (87% of brain impression is by sight).
f. Low cost; can make own slides.
g. Easy to show actual situations.
h. Can make good use of color.
i. A slide can be a prompt, a skeletal image, for the speaker and audience.
j. Can be used to project a simple statement of key points to be elaborated on by speaker.
k. Can be a help for members of the audience who are taking notes of the most important points.

2. Tips and Techniques (specifically for information presentation)

a. Start with a title slide in order to state objectives; give overview.
b. Be brief. Focus on one idea per slide: 6 to 7 items; 6 words per line; upper and lower case letters; (smallest type on slide must be readable in entire room).
c. Use contrast between letters and background.
d. Use simple typeface such as helvetica, sans serif.
e. Use no more than two typefaces; large type.
f. Make slides match script. Don't make your slides the script. Don't insult your audience by reading the slides.
g. As you speak, use the same terms as on the slides, but use a conversational tone and full sentences.
h. Keep in mind:
   - An audience remembers most when the talk is reinforced by visuals.
   - Your slides are your main link with the audience.
   - At the end of your presentation, state your conclusions, suggestions or results explicitly. Convey your message strongly at the end of your talk.

Design Principles: Making Your Audiovisuals More Effective

1. Consider shape.

Some shapes and forms gain more attention than others. In general, asymmetrical, irregular, fairly simple shapes are more eye-catching than duller, symmetrical, complicated ones.

2. Consider size.

Anything large, or large relative to its surroundings, gets attention. Size, therefore, depends to a large extent on the content and general frame of reference. A six-inch spider captures more attention than a six-foot shark.

3. Consider color.

The use of color is perhaps the simplest and surest means of attracting attention. The attraction level of the color is related to vision physiology. Red, for example, attracts more attention than blue if the saturation and intensity of the two hues are equal. Most visible: black on yellow.

4. Consider white space.

White space brings attention to any object that it surrounds.

5. Consider captioning and labeling.

We expect to get the "sense and essence" of the message from the caption. Disappointment results if the caption fails to produce the "gist." Captions should be brief and, if possible, in telegraphic form.

6. Consider movement.

If the eye sees displacement of an object from one position to another, or if increasing distance between two objects is perceived, attention is almost always produced.

7. Consider brightness.

Although certain colors attract more attention than others, it's not the color but the brightness that is really effective. Attention generally is increased by greater intensity of light and color.

8. Consider mystery.

Presenting the visual communication as an unfolding solution can be an effective attention-holding technique.

Using the Chalkboard Checklist

Teacher's name _____ Date _____

Evaluated by _____ Title _____

Technique	Assessment		
1. Was the writing/printing large enough so that everyone could see? Letters 2 1/2 to 3 inches tall?	Yes	No	Comments:
2. If feasible, was printing used rather than writing?	Yes	No	Comments:
3. Was chalkboard kept clean?	Yes	No	Comments:
4. Was chalkboard kept free of glare from windows?	Yes	No	Comments:
5. Did teacher refrain from standing in front of material on the chalkboard?	Yes	No	Comments:
6. Did teacher talk to the class, not to the chalkboard?	Yes	No	Comments:
7. Were time-consuming materials prepared in advance? (Templates for exact illustrations, for example)	Yes	No	Comments:
8. Was material on chalkboard organized, i.e, topic headings used, material labeled, outline format used?	Yes	No	Comments:
9. Was chalk held at an angle with thumb and two fingers to prevent screeching sounds?	Yes	No	Comments:

Using the Overhead Projector & Transparencies Checklist

User's name _____ Date _____

Evaluated by _____ Title _____

Technique	Assessment		
1. Were transparencies prepared in vertical format?	Yes	No	Comments:
2. Did the user avoid mixing vertical and horizontal transparencies in a presentation?	Yes	No	Comments:
3. Was the content of the transparency limited to a single concept or a limited topic?	Yes	No	Comments:
4. Was the content of the transparency limited to six to eight lines of print?	Yes	No	Comments:
5. Were the letters 1/4 inch tall or larger?	Yes	No	Comments:
6. Did the user use the disclosure method to present information? (Uncover words/lines as needed)	Yes	No	Comments:
7. Did the user turn off the lamp when not projecting information?	Yes	No	Comments:
8. Was color used to give emphasis to the subject?	Yes	No	Comments:
9. Did the user make use of a pointer to draw attention to an item on the transparency?	Yes	No	Comments:
10. Did the user refrain from blocking the observer's view of the screen?	Yes	No	Comments:
11. Did the user talk to the class/group and not to the projector?	Yes	No	Comments:
12. Did the user place the screen so that the class/group could easily see it?	Yes	No	Comments:
13. Was the image kept in focus during the presentation?	Yes	No	Comments:

Using Displays Checklist
(Bulletin Boards, Window Exhibits, Showcases)

User's name _____ Date _____

Evaluated by _____ Title _____

	Technique	Assessment		
1.	Is the display simple in design and content?	Yes	No	Comments:
2.	Does the display present a single important idea that is timely and personal to the viewer?	Yes	No	Comments:
3.	Does the display have a focal point of interest?	Yes	No	Comments:
4.	Does the display make use of actual objects?	Yes	No	Comments:
5.	Is the heart of the display at approximately eye level?	Yes	No	Comments:
6.	Is the heart of the display placed off-center to show action?	Yes	No	Comments:
7.	Does the design of the display lead the viewer's eye from top to bottom; left to right?	Yes	No	Comments:
8.	Does the design of the display make use of horizontal lines rather than vertical lines?	Yes	No	Comments:
9.	Does the display make use of lower case letters, rather than all capital letters?	Yes	No	Comments:
10.	Are the letters of appropriate size for the viewing distance? (e.g., 2-inch letters can be read easily from 25 feet)	Yes	No	Comments:
11.	Is the background neutral in color?	Yes	No	Comments:
12.	Are two or three colors used for accent?	Yes	No	Comments:
13.	Are combinations of colors legible? (e.g., black on yellow, not red on green)	Yes	No	Comments:
14.	Does display arouse interest of the viewer?	Yes	No	Comments:
15.	Does display stimulate thought?	Yes	No	Comments:
16.	Does display cause viewer to want to take action?	Yes	No	Comments:

Using Bulletin Boards Checklist

User's name _____ Date _____

Evaluated by _____ Title _____

Technique			Assessment
Simplicity			
1. Is the display simple in design and content?	Yes	No	Comments:
2. Does the board present a single important idea that is timely and personal to the viewer?	Yes	No	Comments:
3. Is the display restricted to a few carefully selected colors?	Yes	No	Comments:
4. Did the designer refrain from crowding too much material into one space?	Yes	No	Comments:
5. Did the designer refrain from involving decoration without reason, i.e., avoid being 'arty', pretty or cute?	Yes	No	Comments:
6. Is the displayed material surrounded with empty space to secure attention?	Yes	No	Comments:
7. Did the designer refrain from having distracting, patchy subject headings and unrelated labels?	Yes	No	Comments:
8. Are the informational captions in limited areas or units inside the display area, rather than at the edges?	Yes	No	Comments:
Unity			
9. Does the display have a dominance of similar shapes, lines, and space that helps to maintain a family relationship?	Yes	No	Comments:
10. Does the design emphasize a basic line direction throughout the design?	Yes	No	Comments:
Emphasis			
11. Is an important item emphasized by setting it apart with isolating space, value contrast, color contrast, texture contrast?	Yes	No	Comments:
12. Is an important item emphasized by the use of a directional device such as an arrow, line, or string?	Yes	No	Comments:

(continued)

Using Bulletin Boards Checklist

(continued)

13.	When feasible, is the illustration projected into space with a three-dimensional device (actual object, or item raised with use of pins, plastic foam, etc.)?	Yes	No	Comments:

Balance

14.	Is the design in informal balance rather than formal balance?	Yes	No	Comments:
15.	Does the design avoid diagonal lines that might move the eye out of the display?	Yes	No	Comments:

Using the Camcorder Checklist

User's name _____ Date _____

Evaluated by _____ Title _____

Technique	Assessment		
1. Did the operator "warm-up" students and guest lecturers to videotape and being on television before taping?	Yes	No	Comments:
2. Did the operator use more than one microphone if sound is a problem?	Yes	No	Comments:
3. Did the television teacher plan lessons more carefully for videotaping?	Yes	No	Comments:
4. Did the television teacher remain in the viewing area?	Yes	No	Comments:
5. Did the television teacher give a more complete verbal explanation when videotaping a physical demonstration?	Yes	No	Comments:
6. Did the operator use both long-range and zoom lenses?	Yes	No	Comments:
7. Did the operator use the four "moving-camera" techniques?			
Panning: horizontal movement	Yes	No	Comments:
Tilting: vertical movement	Yes	No	Comments:
Dollying: movement toward or away from subject	Yes	No	Comments:
Zooming: change in focal length of camera lens that simulates effect of camera moving toward or away from subject	Yes	No	Comments:
8. Did the operator use long shots as "establishing" shots to help viewer see the relationship between the whole and the parts?	Yes	No	Comments:
9. Did the operator use medium shots to concentrate on the main elements of the scene?	Yes	No	Comments:
10. Did the operator use close-up shots to permit one element to dominate the scene to emphasize detail?	Yes	No	Comments:
11. Did the operator refrain from placing microphone on table on which demonstration was given, to avoid picking up too much noise?	Yes	No	Comments:

Using Slides Checklist

User's name _____ Date _____

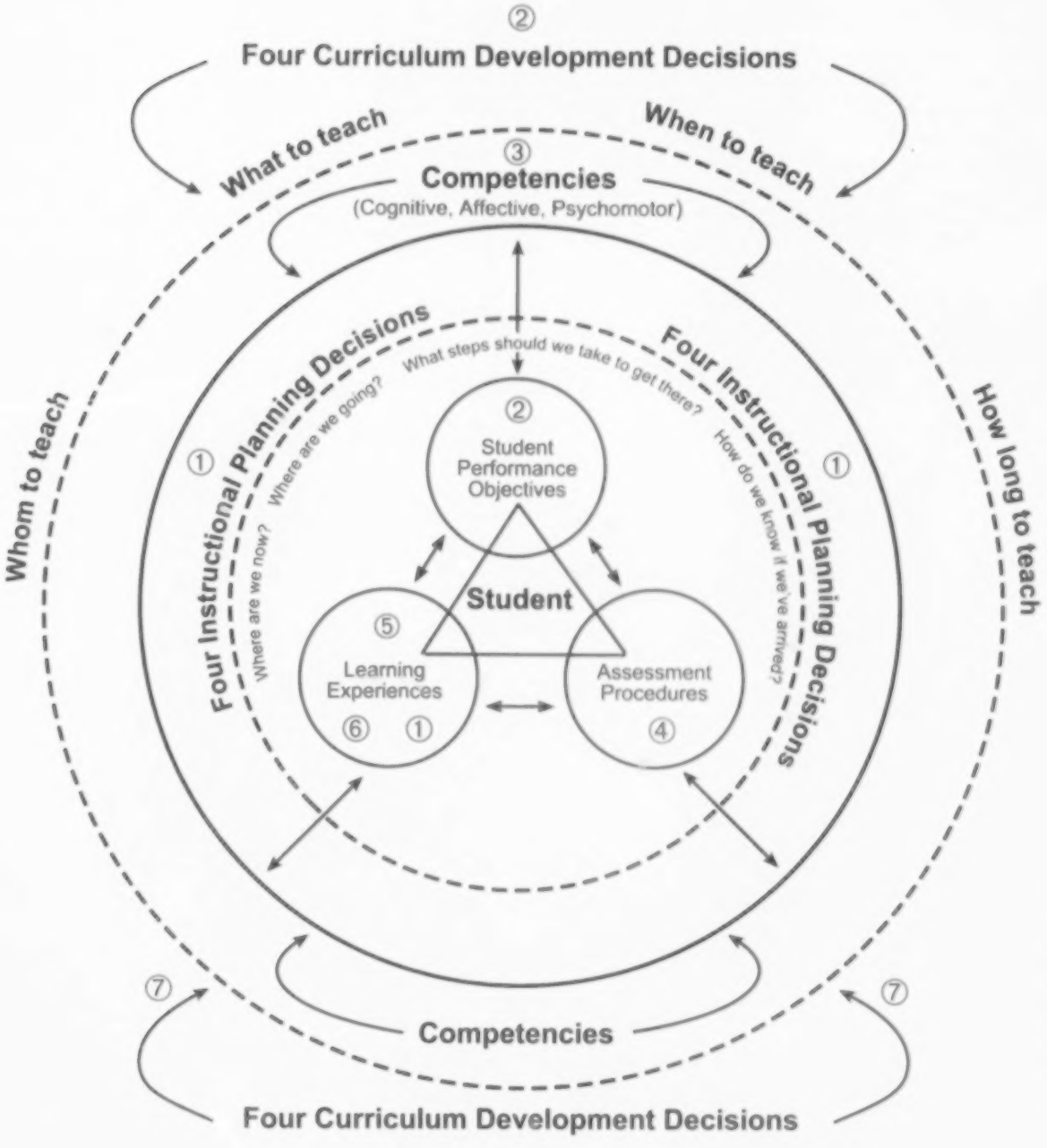
Evaluated by _____ Title _____

Technique		Assessment		
1.	Was the presentation started with a title slide?	Yes	No	Comments:
2.	Was a slide used to present the objectives of the presentation, or the overview?	Yes	No	Comments:
3.	Was there only one idea per slide?	Yes	No	Comments:
4.	Were there only six or seven items per slide?	Yes	No	Comments:
5.	Were the lines a maximum of six words in length?	Yes	No	Comments:
6.	Were both upper and lower case letters used?	Yes	No	Comments:
7.	Were slides readable in entire room?	Yes	No	Comments:
8.	Was there contrast between letters and background?	Yes	No	Comments:
9.	Was a simple typeface used, like Helvetica, sans serif?	Yes	No	Comments:
10.	Was a maximum of two typefaces used? large type?	Yes	No	Comments:
11.	Did the slides match the verbal script?	Yes	No	Comments:
12.	Did the presenter refrain from reading the slides?	Yes	No	Comments:
13.	Did the presenter use the same terms as on the slides while speaking?	Yes	No	Comments:
14.	While using the same terms, did the presenter speak in a conversational tone and use full sentences?	Yes	No	Comments:
15.	Did the presenter, at the end of the presentation, state his/her conclusions, suggestions, or results explicitly?	Yes	No	Comments:
16.	Were the slides maintained in focus during the presentation?	Yes	No	Comments:
17.	Did the presenter have an extra projector bulb available?	Yes	No	Comments:
18.	Were viewers situated so they could all see the screen?	Yes	No	Comments:
19.	Did the presenter use an amplifying system if the room was large?	Yes	No	Comments:
20.	Did the presenter use a pointer (object or light) to emphasize key points on a slide?	Yes	No	Comments:

Appendix C

Linking the Planning, Teaching, Learning, and Assessing Processes

A Graphic of Linking the Planning, Teaching, Learning, and Assessing Processes



L.E. Hedges, *Instructional Linkage*. OSU, AgEd 621: *Curriculum Development*, 1994
Graphic rendered by Amelia Boye, 2000

Linking the Planning, Teaching, Learning, and Assessing Processes

Before you can use the linkage of the planning, teaching, learning, and assessing processes effectively, you need to understand several key terms and concepts. These were included in the earlier chapters of this book. A review here will be helpful to you.

The four functions of a teacher are

- teaching function,
- administration and management function,
- occupational/subject area specialist function, and
- student counselor function.

To teach means to direct the learning process.

There are four steps in the learning process:

- Selecting/Presenting stimuli
- Receiving stimuli
- Perceiving stimuli
- Acting on perceptions (learning occurs)

Good teaching is the kind that causes relatively permanent, desirable changes in the learner—changes in thinking, judgment, reasoning, communication, creativeness, attitudes, appreciations, understanding, and manipulative skills. Good teaching is the kind that causes students to approach learning with eagerness.

To learn means to be able to do something you have never done before, and to remember it well enough to do it again. In other words, there is a change in the behavior of the learner in the cognitive domain (of learning), the affective domain, and/or the psychomotor domain as a result of the learner progressing through the steps in the learning process.

To be a student means to study or carefully examine a subject.

To study means to do a detailed examination or analysis of a subject; to set oneself to learn (a subject).

A learner is one who is acquiring knowledge of or skill in a subject by study, instruction, or experience.

Lesson planning means the teacher thinks through in advance what he/she wants to have happen in the classroom or lab.

A lesson plan is a written step-by-step account of what the teacher wants to have happen in the classroom or lab.

Assessment of student learning is a process involving the collection and analysis of pertinent information to judge educational outcomes. These outcomes for the student are the knowledge, skills and attitudes/appreciations that learners/students are expected to attain as a result of their educational experiences.

Supervision is observing performance with a view toward improving it.

Evaluation is judging performance based on accepted criteria (of teaching).

The supervisor is the person who has the responsibility of doing the observation and evaluation of the specific performance and who knows the elements of good teaching.

The Linkage Concept

Distributed throughout the model on page 80 are circled numbers. These numbers refer to specific references that will help you perform the process in which the number is located, e.g., writing student performance objectives (use reference #2, page 84); using assessment procedures (use reference #4); supervision of instruction (use reference #7); etc.

The following paragraphs explain how the four processes—planning, teaching, learning, and assessing learning—are linked together to comprise a complete, seamless educational process. The paragraphs are listed in the approximate sequence in which the linkage is built or occurs.

1. **The student should be the center of the four functions of a teacher**. Our actions as teachers are directed to meeting the many and varied needs of our students. Teacher actions and student needs are linked together. (Use reference #1.)

2. The center of the linkage mode is, of course, the student. Remember: **"We teach students a subject, not a subject to students."** The student is the center of activity in the overall educational process. The student has many needs: personal, family and community, school and work, citizenship, etc. (Use reference #1.)

3. The student needs to obtain/learn certain skills, attitudes and understandings or knowledge. These come from the **four curriculum development decisions**, which form the outer circle of the model. (Use reference #2.)

4. The decision of **what to teach** results in a listing of competencies that the student needs to learn. These competencies contain learnings in the three domains: cognitive, psychomotor, and affective. The competencies form the next circle in the model. (Use reference #3.)

5. From the various competencies, the teacher develops the **student performance objectives**. These serve as the basis of each lesson plan. The objective is the answer to one of the planning decisions discussed below, **"Where are we going?"** (Use reference #2.)

6. When preparing the lesson plan, the teacher considers **four instructional planning decisions**: Where are we now? Where are we going? What steps do we need to take to get there? How do we know if we have arrived? (Use reference #1.)

7. In order to answer the question "Where are we now?" the teacher uses **assessment procedures** to find out what the students already know about the objective of the lesson. These procedures may be oral questions, or a paper-and-pencil pre-test, or teacher observation, etc. The students are those identified in the curriculum development decision, **whom to teach**. (Use reference #4.)

8. Within the lesson plan are specific learning experiences selected by the teacher to assist the student in proceeding through the steps in the learning process. These selected **learning experiences** (some would call them instructional strategies) comprise the answer to the planning question, "**What steps do we need to take to get there?**" These steps to take are also answers to the curriculum planning decisions, **when to teach, and how long to teach**. (Use references #2, 5.)

9. During the course of the lesson, the teacher uses various formative assessment procedures to monitor student progress in reaching the performance objective(s). At the close of the lesson, the teacher uses appropriate summative assessment procedures to determine the degree of student learning. The **assessment procedures** provide the answer to the planning question, "How do we know if we have arrived?" (Use reference #4.)

10. **The double-headed arrows or vectors indicate the interrelationship or linkage of the processes of planning, teaching, learning, and assessing**. For example, the teacher may find that the assessment techniques or procedures indicate that the students are not learning the competency in the student performance objective. The teacher may then decide that the lesson plan (selected learning performances) will need to be changed. The teacher may even determine that the student performance objectives need to be rewritten to match the ability level of the class. Or that the competency is not appropriate for the class—the competency that originated in the curriculum development decision of "What to teach." Thus, the curriculum for the program/course would be evaluated to determine any needed changes in the list of competencies to be taught. (Use references #1, 2, 3, 5.)

11. During the teaching of the lesson, the teacher may find that **some students are not willing to give proper attention** to the desired activities in the learning process. Certain actions must be taken by the teacher to regain student attention. (Use reference #6.)

12. At various times during the year, **the teacher will be evaluated** by another educator, either a university supervisor, building principal, department head, or cooperating teacher (if evaluatee is a student teacher). The goal of this supervision activity is to help the teacher survive and grow in the teaching profession. (Use reference #7.)

L.E. Hedges, AgEd, OSU, AgEd 621:Curriculum Development, 1994

Appendix C Reference Materials and Their Sources

Materials by the Author, Lowell E. Hedges

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2. *Developing Your Curriculum Guide: From Competencies to Student Performance Objectives.* 1995. VIML.

3. OCAP for _____. [A variety of authors] VIML, CMS. 1995, 1996.

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5. *Teaching for Connection: Critical Thinking Skills, Problem Solving, and Academic and Occupational Competencies—Lesson Plans.* 1996. Curriculum Materials Service.

6. *Anticipation and Preparation: A Teacher's Survival Guidebook.* 1997. Curriculum Materials Service.

7. *Supervising the Beginning Teacher: An Affirming Approach.* 1989. The Interstate. (Copies now available at CMS.)

Sources

CMS Ohio Agricultural Education Curriculum Materials Service
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